
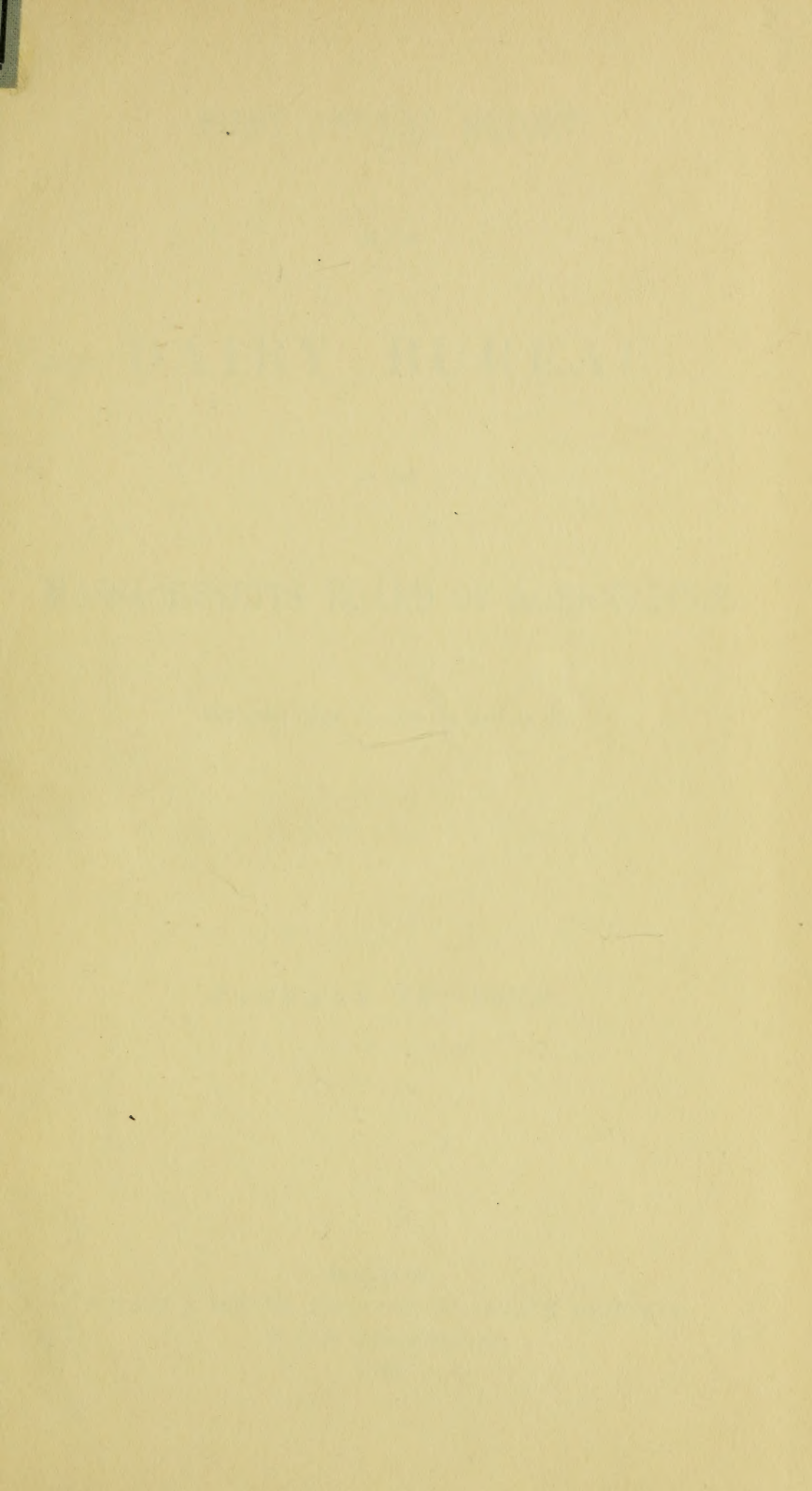


3r
1-1917
3



Digitized by the Internet Archive
in 2013



FIRST ANNUAL REPORT

OF THE

Mass.: DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE.

REQUIRED UNDER CHAPTER 412, ACTS OF 1891.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

JANUARY 15, 1892.

BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
18 POST OFFICE SQUARE.

1892.

MAR 15 1940

STATE HOUSE, BOSTON

Gift U. of Wisc. Library

MASSACHUSETTS
TO
STATE LIBRARY

614.32M3

D13r

1891-1917

B

REPORT OF THE DAIRY BUREAU.

To the Senate and House of Representatives of the Commonwealth of Massachusetts.

The law creating this bureau went into effect Sept. 1, 1891, and requires a report to the legislature not later than January 15, consequently the bureau's first report—to Jan. 1, 1892—covers a period of only four months. But not all of even that brief time has been available for active work. Several weeks were unavoidably consumed in the appointment, confirmation and organization of the bureau. Considerable time has also been necessarily consumed in making plans and getting ready for work, the delay being increased by the fact that the law and the office were new, and that, therefore, there were no traditions or precedents to go by. Consequently not much active field work was done before the middle of November.

As the law under which the bureau operates is, in the popular mind, intimately associated with restricting the sale of oleomargarine, there is danger that it may be considered a mere police or detective provision; and in order to show clearly the duties of the bureau we copy a portion of the law.

Chapter 412, section 7, of the Acts of 1891, says that the bureau is “subject to the general direction and control of the board of agriculture,” but its particular duties are defined in section 11 of the same chapter as follows:—

“To investigate all dairy products and imitation dairy products bought or sold within the Commonwealth;

“To enforce all laws for the manufacture, transfer and sale of all dairy products and all imitation dairy products within the Commonwealth, with all powers needed for the same;

“To investigate all methods of butter and cheese making in cheese factories or creameries; and

“To disseminate such information as shall be of service in producing a more uniform dairy product of higher grade and better quality.”

A careful reading of this law shows that it is very broad and comprehensive. Not only does it relate to the illegal sale of imitation butter, but it covers the whole range of dairy problems.

For instance, all questions relating to sale milk come within the province of this bureau, which can investigate the proper feeding and sanitary conditions of cows, the milk standard, and the transportation and delivery of milk. The bureau is also charged with an investigation of all methods of butter and cheese making. Further than this, the bureau is charged with the dissemination of information on these topics.

The law is not an example of class legislation, but is of vital interest to every one who buys a pint of milk or a pound of butter. At the same time, it is a protection to the farmer against an unfair competition with imitation dairy products and may be a source of much education.

The executive work of the bureau was placed by the statute in the hands of the secretary of the Board of Agriculture, but as he was already a very busy person, the legislature gave him an assistant for this work, to be appointed by the Governor. The Governor appointed to this position George M. Whitaker. The bureau has also authority to appoint such additional assistants as may be necessary, and in accordance with that provision it has secured the services of J. W. Stockwell. Professor Goessmann has been appointed chemist to the bureau.

The duties imposed by the statute seem naturally to divide themselves into two classes: those of an educational and those of a police nature. Mr. Whitaker has been assigned to the first, in addition to assisting in the general executive work; he has been instructed to inspect the creameries of the State and to respond to calls for institute work. A Babcock milk tester has been placed at his disposal. Mr. Stockwell has been appointed an agent for securing evidence of the violation of the laws in relation to the sale of oleomargarine. Polariscopes have been procured for the use of each of these gentlemen in testing oleomargarine.

The actual work accomplished so far, as stated above, includes much of a preliminary character. The first thing

that was done was to codify, print and distribute the dairy laws of the State for the information of all persons interested or concerned.

Interviews have been held with the State Board of Health and also the milk inspectors of Boston and other cities, relative to working in unison with them (section 10, chapter 412) and also to avoid unnecessary duplicating of the same work.

In almost every case we have been met with the utmost courtesy and with assurances that we could work in unison with these different officers.

Interviews have also been had with the collector of internal revenue and a list of persons holding United States licenses has been secured. In some States the dairy commissioner has had trouble in obtaining this list and has sharply criticised the United States officials for such failure. This bureau has found no trouble whatever in this matter. The United States laws very emphatically forbid the commissioner of internal revenue from furnishing any lists of licensed parties. At the same time, they provide that a general alphabetical list shall be kept open for public inspection at all times, and from this public list was copied the names of those holding oleomargarine licenses.

Interviews have also been held with Dr. Goessmann relative to analyses of suspected samples of oleomargarine; and with both him and Dr. Davenport relative to microscopic tests of the same.

Most of the work done so far toward suppressing the illegal sale of oleomargarine has been that done by the bureau's agent appointed for that purpose, although in Boston Dr. Harrington, the milk inspector, has done much work in that direction. September 1 he detailed a special inspector to look up the illegal sales of oleomargarine, and has taken several cases into court for violation of the laws relating to marks, signs, wrappers, and also for violation of chapter 58 of the Acts of 1891, relative to sales of any articles which shall be in imitation of yellow butter. These were the first cases tried under the law and its constitutionality was at once questioned; two test cases were taken to the supreme court where they were argued before the full bench at the November session. The decision has not yet been rendered.

The milk inspector of Lowell has also done some good work in warning the would-be dealers of oleomargarine and restricting its illegal sale.

The assistant to the secretary has also made a number of calls of inspection in the markets in Boston and many samples have been taken. In several cases she found the letter of the law violated in regard to marks upon the open tubs, although the spirit of the law was complied with; and in those cases letters of warning were sent to the parties.

Mr. Stockwell's work thus far has largely consisted in visiting parties who hold United States licenses and who are openly selling oleomargarine, in order to see that they are complying with all laws on the subject. When in a town or city he has also made other visits of inspection. He has visited Worcester, Uxbridge, Whitinsville, Northampton, Holyoke, Springfield, Athol, Amherst, Lawrence, Lowell, Fall River, Millbury, Millville and Blackstone. He has made over three hundred visits, and sent thirty-two samples to Professor Goessmann. Out of these he has twenty-seven cases ready for entry in court, some of them having several counts. Prosecution would have been begun on all before this had it not been for his sickness. As the least fine is one hundred dollars we hope and expect that the law will be self sustaining and no expense to the State.

Although active work has been in progress for so short a time, the wisdom of the law is already proven. This department of the work is in efficient hands and with the start already made we may expect good results during the year now entered upon. We believe that this work so favorably begun will prove, before the close of another year, to be a great blessing, not only to the Massachusetts dairy farmers, but to all who desire to purchase and use real butter without fear of fraud and deception and at no increase in price.

The report of the assistant to the secretary is herewith appended in his own language and made a part of our report:

“Since receiving the instructions of the dairy bureau to inspect the creameries of the State, there has been time to visit only a little over one-half of the number, owing to the way they are scattered over the whole State and to the

season of the year. The work will be pushed as fast as possible.

“It is often said that when food supplies are prepared in large quantities, the work is necessarily done under conditions which are not particularly appetizing, and that peace of mind would be promoted by eating what is set before us — asking no questions. This is not true so far as creamery butter making in Massachusetts is concerned. With possibly two exceptions, all the creameries visited were found so sweet and clean as to add zest to the readiness with which their product could be eaten.

“Some statistics for the creameries visited are as follows for the months of November and December : —

1. Pounds manufactured per day — from 80 to 600.
2. Wholesale prices, delivered — from 28 to 34 cents.
3. Spaces of cream to pound of butter — from 5.70 to 6.80.
4. Fat in buttermilk — from only a trace to 0.3 per cent.
5. Fat in cream — from 13.2 to 15.85 per cent.
6. Travel of cream gatherers — from 10 to 45 miles.

“The butter is sold largely in towns or cities near the place of manufacturing; some of the creameries in the western part of the State report a growing demand from New York city for unsalted butter. All of the creameries seemed to be doing well, with a brisk demand for all the butter they could make. The ratio of miles of travel to number of patrons is an important factor in the success of the creamery. One reported twenty miles travel for fourteen patrons; another twenty miles for twenty; and another twenty miles for thirty-two. The expense in each case would be the same, but in the one case it would be shared by fourteen persons and in another by thirty-two persons. To each of the latter it would be less than one-half what it would be in the former case: a suggestive point of the value of co-operation and the need of its being thorough to be most effective. The highest cost of making butter reported was eight cents per pound. The creamery reporting the most number of spaces of cream per pound of butter explained the fact by saying that none of the farmers were feeding grain and many of their cows were nibbling on frosty grass during the middle of the day; but coupled with this is the strange fact

that the next largest number is reported by a creamery which has the largest number of carefully fed pure-bred Jerseys. The creameries generally allow cotton-seed meal to be fed but restrict the quantity.

“I have also begun the work of visiting institutes and explaining the work of the bureau and testing milk for butter fat. The range of samples tested was from 2.2 to 5.40. The lowest was from a cow that had recently been transported in the cars a long distance and then driven several miles in a cold storm. The latter was a grade of no predominating breed, but selected by the owner as a family cow for the quality of her milk.

“This department of the dairy bureau’s work has great possibilities of benefit to the farmers and the consumers of dairy products, the full scope of which does not appear at first thought but which broadens every day one is engaged in the work. We believe it will help the farmer and improve the quality of his stock and his products, and thereby benefit every consumer.”

The financial report of the Dairy Bureau is appended.

FINANCIAL REPORT OF THE DAIRY BUREAU.

Appropriation by Legislature of 1891, . . .	\$4,000 00
C. L. Hartshorn, <i>Chairman</i> ,	
Travelling and necessary expenses, . . .	\$12 00
G. L. Clemence,	
Travelling and necessary expenses, . . .	23 40
D. A. Horton,	
Travelling and necessary expenses, . . .	30 00
G. M. Whitaker, <i>Assistant Executive Officer</i> ,	
Travelling and necessary expenses, . . .	60 61
J. W. Stockwell, <i>Agent</i> ,	
Salary,	275 00
Travelling and necessary expenses, . . .	149 54
Sundries,	18 69
Analyses and Tests,	147 00
Printing,	72 66
Stationery and postage,	5 35
Microscopes, Polariscope, Babcock Tester, . . .	108 80
	<hr/>
	\$4,000 00 \$903 05

C. L. HARTSHORN,
G. L. CLEMENCE.
D. A. HORTON,
Dairy Bureau.

SENATE No. 10.

SECOND ANNUAL REPORT

OF THE

Mass.; DAIRY BUREAU

OF THE

Massachusetts Board of Agriculture.

REQUIRED UNDER CHAPTER 412, ACTS OF 1891.

JANUARY 16, 1893.

[1893]
412.

614.32M3
IIISx
1892
B

REPORT OF THE DAIRY BUREAU.

To the Senate and House of Representatives of the Commonwealth of Massachusetts.

The law creating the dairy bureau went into effect Sept. 1, 1891, and is therefore only one year and four months old.

During this brief period much time has been necessarily expended in the details of organization, in the making of plans, and in other matters of preliminary routine; for the dairy bureau was an entirely new department of the State machinery, without traditions or precedents to aid it in getting into operation. In addition to this, the members of the bureau, with their executive officers, were unfamiliar with the class of duties imposed upon them by the statute; consequently this first record of a full year's work cannot report as great achievements as we hope will be possible with more experience and greater familiarity with our duties and responsibilities.

Chapter 412, section 7, of the Acts of 1891, says that the bureau is "subject to the general direction and control of the Board of Agriculture," but its particular duties are defined in section 11 of the same chapter as follows:—

To investigate all dairy products and imitation dairy products bought or sold within the Commonwealth;

To enforce all laws for the manufacture, transfer and sale of all dairy products and all imitation dairy products within the Commonwealth, with all powers needed for the same;

To investigate all methods of butter and cheese making in cheese factories or creameries; and

To disseminate such information as shall be of service in producing a more uniform dairy product of higher grade and better quality.

This very comprehensive law includes educational and police duties, and can be enforced in such a broad manner as to enhance the interests of consumers and producers of dairy products, of dwellers in both city and country. It has been the aim of the bureau to make its work of service to the whole community.

The executive department of the bureau remains the same as at the time of its report a year ago. Wm. R. Sessions, secretary of the Board of Agriculture, is by statute the responsible executive officer; but most of the actual executive work falls upon his assistant,—appointed by the governor,—Geo. M. Whitaker. In addition to these executive duties, Mr. Whitaker has also been placed by the bureau in immediate charge of the educational department of the work. J. W. Stockwell continues an agent of the bureau for securing evidence of the violation of the laws in relation to the sale of oleomargarine.

THE POLICE DEPARTMENT.

The statute gives the bureau authority to enforce all the laws relating to all dairy products, but in the brief time the law has been in operation, and with the means at our disposal, there has been opportunity to take up only the oleomargarine laws. These laws are in brief as follows:—

1. Requirements for branding boxes and tubs and for marking wrapping paper, with a penalty for false marking or branding.
2. A prohibition of the use of the word “dairy” or “creamery” on any tub or package.
3. A requirement for licensing a dealer and a conveyer.
4. A penalty for selling oleomargarine as butter.
5. Requirements for signs on stores and wagons.
6. A prohibition of the sale at hotels and restaurants without giving notice.
7. A prohibition of the sale of any imitation of yellow butter.

Laws regulating the sale of oleomargarine were first passed in this State in 1881, and, as experience showed the need of more and more restrictive measures, additional legislation was enacted in 1884, 1885, 1886 and 1891. The absolute prohibition of the sale of any imitation of yellow

butter is the most important, as it is the most restrictive, of all this legislation. This measure was hotly contested in the Legislature for several years, and it has been opposed with equal vigor since its enactment. The first cases brought under it (chapter 58 of the Acts of 1891) were rapidly advanced to the supreme court. In point of time this law was passed before chapter 412 of the same year, which had other restrictive measures, though both went into effect at the same time. It was argued that the anti-color law (chapter 58) was repealed by implication by the enactment of chapter 412. The supreme court refused to sustain this point. The claim was also made that the law in question was unconstitutional, as interfering with interstate commerce, the oleomargarine in question being the product of other States, and sold in the original package. This point, too, was overruled by the supreme court, on the ground that it is within the police powers of the State to pass laws prohibiting the sale of an imitation article, in the interest of honesty and fair dealing. The court said, "The question is, may a State protect itself against articles so prepared as to deceive the public?" To this question the court said, "Yes."

This is in accordance with the spirit of the decision of the United States supreme court in the case of a prohibitory oleomargarine law in Pennsylvania, by which it was declared that a proper exercise of the police power of the State is not an unlawful interference with interstate commerce. This decision of the State supreme court sustaining the law was not rendered till early in May, and not until about the first of June would district and municipal courts entertain complaints for selling an imitation of yellow butter. Hence for nine months of the existence of this law it has been inoperative by reason of its status being uncertain. Although this has greatly interfered with our work, it has not prevented its prosecution with what vigor was possible. The detective officer of the bureau kept faithfully at work, getting evidence of the violation of this and the other oleomargarine laws. The decision of the court was received so late that complaints for earlier infractions of the law were dropped for new ones on fresher evidence. Our work in this department has been

largely confined to places outside of Boston, as, under the provisions of law allowing us to work in harmony with milk inspectors, we have practically left the Boston field to Dr. Harrington, as, with his wide experience, the more liberal funds at his command, and a disposition impartially and thoroughly to enforce all the laws within his jurisdiction, we felt he could do better than we could, and that it would be a more economical use of our appropriation to expend it in other parts of the State.

The clause of the law suggesting that the bureau may act in harmony and unison with the Board of Health and milk inspectors has worked excellently, so far as the Boston milk inspector is concerned. We are indebted to Dr. Harrington for many valuable suggestions, growing out of his long experience, and in return we hope we have been of some help to him, particularly in furnishing him in court with needed technical evidence on dairy matters. An officer of the bureau has appeared in court as a witness for him in about twenty cases. Such reciprocal favors have, we trust, helped both sets of officers, and increased the efficiency of the enforcement of the law.

The decision of the Massachusetts supreme court, sustaining the anti-color law, was appealed to the national supreme court; and this action, it was claimed by the oleomargarine lawyers, continued to keep the law in suspense. But our legal advisers did not coincide with this view, and, as a result of the entry of several cases in court, a bill in equity was brought in the United States court of appeals for an injunction to restrain Dr. Harrington from enforcing the law. This has been postponed from time to time, and has not been argued yet.

In enforcing these laws, the greatest number of cases has been brought for selling an imitation of yellow butter, and these cases have been stubbornly contested in New Bedford, Boston, Springfield, Holyoke, Uxbridge, Worcester and elsewhere. The defence has been that oleomargarine is an independent article of commerce, and hence that it is not an imitation of butter or any other commodity; that motive should be proved to prove imitation; also that the standard set up — yellow butter made from unadulterated milk or

cream — does not exist commercially, lacks fixity of shade, is hypothetical rather than actual. In spite of these contests, ably made, convictions have been secured in all the lower courts, all of which have been appealed. Only one appealed case has been tried before the superior court. At the Suffolk County session held last month one was tried; the decision of the lower court was affirmed by the jury, who found the defendant guilty. The case was then appealed to the supreme court, on law points, and another attempt will be made to break down this statute.

The law relative to marks on tubs or boxes requires the word “oleomargarine” or “butterine” to be “stamped, labelled or marked in a straight line in printed letters of plain, uncondensed Gothic type, not less than one-half inch in length, so that said words cannot be easily defaced, upon the top, side and bottom of every tub, firkin, box or package containing any of said article, substance or compound.” This law was evaded by placing the tubs in groups, so that the marks on the bottom and side would not show, and then removing the cover, for the alleged purpose of displaying the goods. For a while the Boston milk inspector required a card bearing the words “oleomargarine” or “butterine” to be placed upon the open tubs in such cases. But eventually the supreme court decided that such a construction of the law was unwarranted. Hence section 2, chapter 412, of the Acts of 1891, was enacted, which provides for an additional sign “*upon every opened tub.*” But the dealers now place the opened tubs on their sides, in pigeon-hole-like receptacles, with this extra sign *upon* the opened tub; it is, however, concealed by the receptacle, so that there is still nothing visible to show the nature of the contents of the tub. In several cases municipal court judges have decided that the letter of the law has thus been complied with. Consequently this law is inoperative, and will need amendment if the intended restriction is to be preserved. We recommend that this law be amended so as to read as follows, the words in italics being those that should be added: —

SECT. 2. Whoever exposes for sale oleomargarine, butterine or any substance made in imitation or semblance of pure butter, not

marked and distinguished by all the marks, words and stamps required by existing laws, and not having in addition thereto *conspicuously upon or across the surface of the exposed contents of* every opened tub, package or parcel thereof a placard with the word "oleomargarine" printed thereon in plain, uncondensed Gothic letters, not less than one inch long, shall be fined not less than one hundred dollars for each offence.

The bureau has also had a few cases for selling oleomargarine when butter was called for, one for sale in a hotel, one for lack of signs on a wagon, and several for improperly stamped wrapping paper.

The detective officer of the bureau has made four hundred and eighty-six visits of inspection to stores or places where oleomargarine is sold; in these he has purchased one hundred and eighty-four samples. The chemical analyses have been made by the State Experiment Station, Dr. B. F. Davenport and Professor Kinnicutt of the Worcester technical school.

Although our work has been hampered by our inexperience, by the newness of the laws, and by the anti-color law being inoperative during a considerable portion of the year, we feel that the legislation under which we act has been of much value in preventing dishonest practices and in restricting the sale of "oleomargarine, which is deceptive, and which is designed and is likely to be passed off for something different from what it is." The clause in quotations is the language of the Massachusetts supreme court. Much oleomargarine is still sold, however; a system of selling upon orders has been devised, by which a licensed wholesaler sends out trusty salesmen to take orders from only known parties, the goods being delivered and billed from the main store. We have reason to believe that the oleomargarine dealers in the State are banded together in a strong organization, which receives material sympathy from the large manufacturers. In nearly all of the cases which have been tried, from New Bedford to Holyoke, the same attorney has appeared for the defence, showing that they are associated together in order to defy and if possible break down the law, and, if defeated, share the costs and penalties when a member is convicted.

One of the arguments advanced for the passage of the law creating the dairy bureau was that such a body could arrive at authoritative and official information as to the extent and nature of the oleomargarine business; for many apparently contradictory statements were made in the arguments before legislative committees and in the Legislature itself. On the one side were many scientific gentlemen, who testified as to the wholesomeness of oleomargarine and its desirability as a food product; on the other hand were those interested in the prosperity of agriculture, asking for relief from what they considered an unjust competition with honest butter.

The facts as they appear to the bureau after its brief experience are that there is some truth in both claims. To a certain extent the old story of the shield is repeated.

We are not prepared to dispute the statements of honest scientists in relation to the value of oleomargarine; we are ready to admit that there is a theoretical oleo, which, if put upon the market honestly, on its merits as an independent article, might have proved an important addition to the world's food products. But the ordinary commercial oleomargarine with which we have to deal seems in many cases to exert a benumbing influence on the moral sensibilities of those who handle it. There seems very little disposition to sell it "in a separate and distinct form, and in such a manner as will advise the consumer of its real character." Every attempt to secure, by legislation, such a manner of selling oleomargarine has been vigorously opposed. From the start it has been made to look like butter, has been sold in butter stores, and given all the nomenclature of the dairy. "Butter-ine" is even now a popular name for it, and, until the law prevented, "dairy butterine" and "creamery butterine" were common terms. Even now some manufacturing companies are incorporated as dairy companies, and we have seen in some stores such a sign as "Butterine from the Wooddale Dairy Company sold here." It is put up in butter tubs or in prints, it is colored with the article of commerce known as "butter color," and sold in butter stores, with the tubs of oleo and the butter tubs side by side. In Massachusetts it is a food product of great merit and value (*sic*), but in Pennsylvania it is "not sold as an article of

food," because a judge there had decided that the government must prove that the defendant intended to sell it as a food.

So far as we are called upon, inferentially, to express any opinion upon the laws, we believe that the facts warrant their existence. The supreme court of Pennsylvania, in a decision quoted with evident approval by the supreme court of this State, says that when an article is put upon the market in such way that it may deceive the public, the Legislature of a State is not exceeding its police powers in even prohibiting the sale of that article, though it might under other circumstances be a harmless and even desirable article of benefit to the public.

The law is to be defended on the broad statement of universal application that imitation is closely allied with deceit, and that any imitation product should be side-tracked if it gets in the way of the regular original article.

THE EDUCATIONAL WORK.

This work has been extended in several directions, with a view of a broad foundation for the future and doing a present good to all classes of citizens of the State.

City Milk Supply.

Considerable has been done in a study of questions relating to the milk supply of large cities, Boston in particular. This has no great results to show as yet, but we believe that a good beginning has been made. The following statements will show something of the importance, need and possible methods of such work. Early in the year there appeared in a medical journal an article by Prof. W. T. Sedgwick of the Institute of Technology, on the amount of bacteria in city milk and the dangers which might result therefrom. His attention was immediately called to the dairy bureau and the powers given it by law, and he was invited to make some suggestions. From this correspondence we make these extracts : —

GEO. M. WHITAKER, Esq., *Assistant Executive Officer, Dairy Bureau.*

DEAR SIR : — The bureau might well investigate more fully the origin and history of the milk regularly sold in Boston, and some

other large cities and towns, with especial reference to the place and method of its production, its pollution at the stable and *en route*, its freshness or staleness when delivered, and its keeping qualities as marketed. The object of such an investigation would be to learn where the milk comes from, under what conditions, good or bad, of temperature, exposure, etc., under which it is produced and transported; how long it is upon the railroad, how long in the hands of the peddlers. . . . It seems to me that it is the duty as well as the privilege of the bureau to inform the producers of milk of the fact of the dissatisfaction of physicians and the consumers with the present conditions of the milk purchased in the cities; of the reasons for such dissatisfaction, and of the remedies.

The fact is that city milk is often filthy . . . and always more or less stale. This is a fact of prime consequence to the makers of milk, and they should know of the dangers which threaten to injure their business. They should be told that the keeping qualities of milk depend almost wholly upon cleanliness; that short-lived milk is usually dirty milk; and they should be made to understand the value of chilled milk, and exactly why it preserves the keeping qualities. . . . The bureau might equip and send out a speaker who, being thoroughly informed, should visit and address societies, meetings, granges, etc. . . . They should urge the practical remedial measures of greater cleanliness and quicker transportation and delivery.

Pursuing plans already partly matured, and carrying out the suggestions of this letter, twenty-five meetings have been attended by an officer of the bureau, and addresses made on questions relating to the milk supply and other dairy topics. The assistant executive officer has been instructed to study these questions, and hold himself in readiness to respond to all calls from farmers' clubs, granges and agricultural societies so far as possible.

Creameries.

Something has been done by the bureau in the inspection of creameries. Some thirty such visits have been made; one cheese factory has also been visited. Cheese manufacturing in the State has about died out, but butter-making is on the increase. Most of the creameries are owned by co-

operative associations, although there are a few which are proprietary. Most of the creameries are in a prosperous condition; those which are weak are suffering from purely local causes. The expense of manufacturing butter may range from eight to four cents per pound, dependent largely upon the amount manufactured and the location of those who furnish cream. If the cream gatherer has to drive past the residences of A, B, C, D and E to get F's cream, the expense of gathering is too great. It would not cost much more to stop at every house. Co-operation can be made a success only by co-operating. •

In addition to this work, the bureau has placed its executive force at the service of the creameries of the State, as a clearing house of general information, and for such clerical work as may be of service and desired by them in collecting and tabulating statistics.

Dairy Schools.

Further work has been done by the dairy bureau in conducting dairy schools or conferences. This kind of educational work was a novelty in New England until inaugurated by this bureau. The idea was first suggested by the Bay State Agricultural Society, which set the ball in motion by paying one-half of the expense of two schools, — those held at Greenfield and Barre. Following these a school was held at the Agricultural College, for the benefit of the senior class; and later in the season four more were held, — at Framingham, Charlton, Cheshire and Gardner. At these meetings many kinds of the latest devices in dairy machinery were exhibited in actual operation. As the separators, the churns, the butter workers, the coolers and the aerators were operated, practical explanations were made and questions answered. Mr. James Cheesman had charge of the technical work, and the meetings seemed to be very profitable and interesting. Many travelled a considerable distance to attend them, and much good seemed to be done. The sight of the various forms of apparatus in actual operation gave the meetings an object-lesson value far beyond what would be possible from a mere lecture or discussion.

Babcock Milk Tester.

Another department of work in which much has been done has been the popularizing of the Babcock milk tester (which readily shows the amount of butter fat in milk), and testing milk and cream. This tester is one of the most important dairy implements of recent invention. One authority says that, if the experiment stations had done nothing but produce the Babcock milk tester, this one result would have been a good return for all the expense. By enabling the farmer readily to test the quality of the milk of each cow, he can weed out those which are unprofitable, and thus make his business more successful. He can also detect wastes in his dairy. The creameries will eventually pay for the cream they receive by this test. The bureau has made two hundred and ninety-eight tests of milk, cream, buttermilk and skim-milk.

Tests of cream showed a range of from 12 to 33 per cent of butter fats. The first was commercial cream, purchased in the open market in Boston, the last a sample of separator cream made at a dairy school at Greenfield.

Samples of buttermilk have been tested, with a range of from 3 per cent down to a mere trace of butter fat. About .30 is considered a good average.

The samples of skim-milk examined varied from .10 to .50 per cent of butter fats. The lowest samples of skim-milk were taken from the separator at the dairy schools.

The whole milk of individual cows examined showed a variation of from 1.80 to 9.80 per cent of butter fats. Samples testing 9.80 per cent and 9.20 per cent were from farrow Jerseys which had been in milk over a year, — one owned in Southbridge and one in Baldwinville. Both of these extremes are abnormal; from 3 to 6 per cent of butter fats will cover the majority of specimens, those below 3 and above 6 being about equal in number. Four tests were made of milk at different stages of milking. In one case the strippings contained as high as 11 per cent of butter fats. In two cases the result was as follows: —

First of the milking, 2 per cent; strippings, 8.30 per cent.

First of the milking, 1.40 per cent; strippings, 5.30 per cent.

First of the milking, 1.10 per cent; strippings, 7.80 per cent.

The following table shows the results of the tests of normal milk, as classified : —

Below 3 per cent butter fats, . . .	.17 per cent of the samples.
From 3 to 4 per cent butter fats, . . .	.25 per cent of the samples.
From 4 to 5 per cent butter fats, . . .	.32 per cent of the samples.
From 5 to 6 per cent butter fats, . . .	.13 per cent of the samples.
Six per cent and over butter fats, . . .	.12 per cent of the samples.

Large interests in the State are involved in the production of sale milk, and to these the law requiring 13 per cent of total solids is of interest and importance. As the solids other than fat are comparatively constant in all kinds of milk, and as the only element that changes very much is the fat, the Babcock test has a practical interest in the information it gives the farmer as to the total quality of his milk. The solids other than fat seldom vary more than three-quarters of one per cent, usually ranging from about 8.75 to 9.50. Usually milk testing from 3.70 to 3.80 per cent of fat is on the line of safety. Of the above samples, 33 per cent were below 3.80; 66 per cent were 3.80 or above.

The range of variation in individual animals is much wider than it is in the mixed milk of several animals. Any one producing milk for market will have a more uniform article, and be less liable to furnish milk below the standard, if he mixes the milk of several animals.

The samples of the mixed milk of herds tested by the officer of the bureau had a range of from 2.30 to 6.10 per cent of butter fats. Avoiding the violent extremes, the range was from 3.30 to 5 per cent.

Of all these samples of herd milk there were : —

	Per Cent.
Below 3.50 per cent, dangerously below the standard, . . .	9
3.50 and 3.60 per cent, possibly below the standard, . . .	19
	—
	28
3.70 and 3.80 per cent, on the line,	17
Above 3.80 per cent, undoubtedly above standard, . . .	55
	—
	72

Two samples bought in the open market in a Massachusetts city tested 1.60 and 1.70; these were probably watered or skimmed, and are not included in the above.

The bureau has also made some investigations as to the accuracy of mathematical formulæ, published by the Vermont and Wisconsin experiment stations, for ascertaining the total solids in milk by the Babcock test and the specific gravity as shown by the lactometer.

One formula is : —

Total solids equal lactometer divided by 4 plus $1\frac{1}{2}$ fat.

The results have been very satisfactory, so far as we have been able to carry them.

The following is the result of six experiments made by chemist J. R. Blair, employed by the C. Brigham Company : —

	Specific Gravity.	Fat.	Total Solids by Analysis.	Total Solids by Calculation.
Sample No. 1, . . .	1.0317	2.60	11.24	11.04
Sample No. 2, . . .	1.0322	3.00	11.66	11.62
Sample No. 3, . . .	1.0317	2.90	11.60	11.50
Sample No. 4, . . .	1.0322	2.90	11.58	11.50
Sample No. 5, . . .	1.0322	2.90	11.52	11.50
Sample No. 6, . . .	1.0322	2.50	11.14	11.04

FINALLY.

It has been the aim of the bureau to carry out the instructions of the law in a broad spirit. We have endeavored in the time given us to do our best to enforce the criminal laws placed under our charge, and to carry out our public duties. But we have given equal attention to the broad educational field. We have endeavored to exert such an influence for better and purer dairy products as to remove from the laws any stigma of class legislation, and to place them upon the broad plane of valuable provisions for the welfare of the whole people. We believe that our work has been of some value in this direction. We know it has given us valuable experience which leads us to hope for better results as time

goes on. The importance of our work can hardly be over-estimated. To protect the agricultural interests, to check fraud and to enhance the quality of leading food products, is a labor as great as it is necessary and valuable.

The financial report of the dairy bureau is appended.

CALVIN L. HARTSHORN,
GEO. L. CLEMENCE,
D. A. HORTON,

State Dairy Bureau.

FINANCIAL REPORT OF THE DAIRY BUREAU.

Appropriation by Legislature of 1892, . . .	\$1,000 00	
C. L. Hartshorn, <i>Chairman</i> : —		
Travelling and necessary expenses, . . .	\$39 00	
Eleven days' services,	55 00	
G. L. Clemence : —		
Travelling and necessary expenses, . . .	86 95	
Twelve days' services,	60 00	
D. A. Horton : —		
Travelling and necessary expenses, . . .	42 00	
Services,	35 00	
G. M. Whitaker, <i>Assistant Executive Officer</i> : —		
Travelling and necessary expenses, . . .	308 74	
J. W. Stockwell, <i>Agent</i> : —		
Salary,	1,075 00	
Travelling and necessary expenses, . . .	619 96	
James Cheesman, <i>Expert</i> : —		
Services,	80 00	
Analyses and tests,	778 50	
Printing,	70 86	
Legal services and court attendance, . . .	150 00	
Supplies,	26 50	
	<hr/>	<hr/>
	\$4,000 00	\$3,427 51

Massachusetts
Board of Agriculture.

THIRD ANNUAL REPORT

OF THE

DAIRY BUREAU.

REQUIRED UNDER CHAPTER 412, ACTS OF 1891.

JANUARY, 1894.

BOSTON:
WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
18 POST OFFICE SQUARE.
1894.

THIRD ANNUAL REPORT
OF THE
~~MASS.~~ DAIRY BUREAU
OF THE
MASSACHUSETTS BOARD OF AGRICULTURE,
REQUIRED
UNDER CHAPTER 412, ACTS OF 1891.

JANUARY 15, 1894.

STATE LIBRARY OF MASSACHUSETTS

MAR 15 1940

STATE HOUSE, BOSTON

Gift H. C. Wisc. Library

YOUNG L. 3475
TO
STANDARD

614.32M3
II 13r
1893
B

REPORT OF THE DAIRY BUREAU.

*To the Senate and House of Representatives of the Commonwealth of
Massachusetts.*

The past year was the second complete year of the existence of the Dairy Bureau; and its labors have been continued along the general lines reported a year ago, with such increased efficiency as would result from increased experience. The *personnel* of the Bureau and its executive staff has been unchanged; the governor reappointed the retiring member, Mr. Clemence, and also the working executive officer, Mr. Whitaker; the Bureau has continued the services of Mr. Stockwell in the detective and court departments. Hence the work has received the full advantage not only of accumulating experience, but also of the concerted action of those becoming more and more accustomed to labor together.

As we advance in the work and more fully realize its possibilities, the meagreness of the appropriation becomes more apparent. The Bureau is given both educational and police duties, covering the whole State, with an appropriation less than one-half of what the city of Boston places at the disposal of its milk inspector for only police work. This small sum restricts us to one detective agent, where the Boston milk inspector has four or five, and it also limits our expenditures for expert assistance in the educational field. As the dairy laws of the State relate more to commercial frauds than to the public health, possibly at some time our funds may be increased, and by friendly arrangement with the Board of Health our field of operations may be enlarged without encroaching on theirs. They could then be relieved of the compulsion of expending three-fifths of their appropriation on dairy products, and could be unhampered in the field of health work; while we, in harmony with them, would have the dairy laws under our **more** especial charge, with particular reference to commercial frauds.

The educational work of the past year has consisted in studying the problems peculiar to both the consuming and producing dairy interests of this State. It has sixty-three cities and towns of over five thousand population, with a million and a half people to be supplied with fresh and pure milk each day; thirty co-operative creameries and five proprietary creameries; a cow population of 186,806 animals and the commercial centre of New England in its midst; within a radius of twelve miles is a population of three-quarters of a million people. In connection with this educational work thirty meetings have been addressed, bulletins have been issued, fourteen creamery inspections have been made, and a butter exhibition has been held. Much has been done to acquaint milk producers and milk consumers with the varying qualities of milk, and the easy, ready method of investigating them by the Babcock milk tester,—a modern invention of untold importance, which will revolutionize many practices.

The police work has been mostly confined to an enforcement of the oleomargarine laws. The appropriation precludes attention to both the milk and oleomargarine laws; and, as the Board of Health does more with the former, we attend to the latter. Our work has been largely outside of Boston. In this city the laws are so well executed by Dr. Harrington, milk inspector, that it would be a waste of effort to attempt much in this field.

The following is a more detailed report of our work.

CO-OPERATION WITH THE BOSTON MILK INSPECTOR.

Section 3, chapter 58, Acts of 1891, and section 2, chapter 310, Acts of 1884, give inspectors of milk authority to enter all places where butter or imitations thereof are kept for sale, and to take samples. These statutes say nothing about the deputies or agents of milk inspectors, and attorneys have questioned the authority of these agents. The law creating the Dairy Bureau gives all needed power “to such agents, and counsel as they shall duly authorize.” Therefore, Dr. Harrington, the Boston milk inspector, and all his deputies and collectors, have been made agents of the Dairy Bureau. This has also helped them in enforcing the milk laws, as,

The result of these forty-eight cases has been as follows : —

Convictions,	23
Plead guilty,	7
	— 30
Acquitted,	12
Not prosecuted,	6
	— 48

Of the above six, three were withdrawn on account of informality in complaint or lack of evidence, and three in order to secure a plea of guilty in other cases. In one instance, having five cases against one person (a young lady), we consented to *not pros* two in consideration of a plea of guilty being entered in the remaining three. Six of the acquittals were in cases where oleo was sold when butter was called for, because the statute omits to include “by himself or agents” in the prohibition; and the courts decided — on the basis of an intoxicating liquor decision — that, in view of this decision, the statute omitting “by himself or agents,” the principal was not holden for the acts of the agent who acted contrary to orders. The person who actually makes the sale is now complained of.

The cases in court were under the following complaints : —

No sign in store,	3
Hotel and restaurant,	6
Selling imitation of yellow butter,	6
No mark on wrapper,	13
Selling oleo when butter was called for,	20
	— 48

This department of the Dairy Bureau’s work has been more beneficial and restraining than a mere list of court cases would signify. The prevention of crime is as important as the punishment of lawbreakers. The occasional unexpected visits of an agent of the Dairy Bureau in the various parts of the State has, we believe, deterred many would-be lawbreakers, and promoted honesty in the sale of oleomargarine. Although much is still sold in the State, especially since the system of selling on orders was devised, our labors have done much to increase honest dealings and to curb fraud.

NEED OF LEGISLATION.

That forty-two per cent of the cases, almost one-half, were for absolute fraud, is significant.

As regards the need of these laws, the experience of another year only confirms and emphasizes what we said a year ago. While the oleomargarine manufacturers claim to have discovered a new food product of great value to the public, "a separate and distinct food product," "a distinct and valuable food product, which sells on its own merits," the way in which it is too often sold at retail has a strong flavor of deceit and misrepresentation. The following is a photographic reproduction of the trade mark of one manufacturer, — omitting his name. It is not suggestive of an independent food product, selling on its intrinsic individuality.



"The largest butter store in Boston. Try our fancy Jersey Butterine Prints," was a sign recently displayed on Blackstone Street in this city, urging people to buy that "independent and separate food product, sold on its intrinsic merits." Butter tubs, butter color, dairy nomenclature, prominent butter signs, opposition to all laws for honest wrappers and marks, are familiar features in the history of this independent and separate food product, sold on its intrinsic merits.

We reproduce below the market quotations of oleomargarine in the style in which they appear daily in the Chicago papers. This also does not appear like an individual independent food product, like cheese or eggs.

THE PRODUCE MARKET.

BUTTER—Firm. Receipts, 395,011 lbs; shipments, 511,100 lbs. Fancy creamery, 28½@29c per lb; fine, 27@28c; fair to good, 23@25c; choice to fancy cooleys, 24@26c; choice dairies, 22@24c; fair to good, 17@20c; ladles, No. 1, 18c; No. 2, 16½@17c; packing stock, 16@17c.

BUTTERINE—Steady. Fancy creamery, 19c per lb. Illinois creamery and extra dairy, 17c; Empire and Diamond dairy, 16c; Eastlake and Lakeside dairy, 14½c. Rolls, prints and 10-lb pkgs. ½c per lb additional.

CHEESE—Receipts, 298,284 lbs; shipments, 340,850 lbs. Firm. Full cream, choice, 10@11c per lb; twins, sharp, 7@9c; Young Americas, 7@11c; sour and out of condition, 4@6c; brick, 10@11c; Limburger, 10½@11c; Swiss, 10½@11½c.

CALIFORNIA FRUITS — Offerings liberal. Peaches, 20-lb boxes 80c@1.15; pears, 40-lb boxes, \$2@3.50; grapes, \$1.40@1.60 per ½ case.

EGGS—Receipts, 4,028 pkgs; shipments, 3,903 pkgs. Firm. Fresh northern, 20c per doz.

We are not opposed to any valuable food product which is or may be put upon the market “in a separate and distinct form, and in such manner as will advise the consumer of its real character.” We repeat what we said last year:—

“We are not prepared to dispute the statements of honest scientists in relation to the value of oleomargarine; we are ready to admit that there is a theoretical oleo, which, if put upon the market honestly, on its merits as an independent article, might have proved an important addition to the world’s food products. But the ordinary commercial oleomargarine with which we have to deal seems in many cases to exert a benumbing influence on the moral sensibilities of those who handle it.”

In the above we do not overlook the fact that there are degrees of digestibility, and that butter is superior to oleomargarine on this score.

At Chicago, Armour & Co. displayed a bulletin announcing Massachusetts as one of the States where its sale is prohibited; and yet it is claimed that the receipts of oleomargarine in Boston for the year were 228,554 packages, against 188,380 packages in 1892, — an increase of 40,174 packages. Armour & Co. also made this assertion: “The United States has approved of its sale by its acts of inspection, regulation

and taxation." Thus they perverted an act aimed against them into an endorsement of their goods.

NEEDED AMENDMENTS TO LAWS.

The experience of the past year has shown where several amendments might add to the efficiency of the laws. Add the words in italics in the first four paragraphs:—

Chapter 412, Acts of 1891, section 1. Whoever *by himself or agents* sells or offers for sale, etc.

Chapter 412, Acts of 1891, section 2. Whoever exposes for sale oleomargarine, butterine or any substance made in imitation or semblance of pure butter, not marked and distinguished by all the marks, words and stamps required by existing laws, and not having in addition thereto upon *the exposed contents of* every opened tub, package or parcel thereof a *conspicuous* placard with the word "oleomargarine" printed thereon in plain uncondensed, etc.

Chapter 58, Acts of 1891, section 1. No person, by himself or his agents or servants, shall render or manufacture, sell, offer for sale, expose for sale, *take orders for the future delivery of*, or have in his possession with intent to sell, any article, product, or compound made wholly or partly out of any fat, oil or oleaginous substance or compound thereof, not produced from unadulterated, etc.

Chapter 317, Acts of 1886, section 3. Whoever, by himself or his agents, sells, exposes for sale, or has in his possession with intent to sell, any article, substance or compound, made in imitation or semblance of butter or as a substitute for butter, and not made exclusively and wholly of milk or cream, or containing any fats, oils or grease not produced from milk or cream, contained in any box, tub, article or package, marked or labelled with the word, — dairy, — or the word, — creamery, — *or the name of any breed of dairy cattle*, — shall for every such offence forfeit to the city or town where the offence was committed one hundred dollars, and for a second and each subsequent offence two hundred dollars.

Also prohibit the use of the word dairy, or creamery, or the name of any breed of cattle on any sign, placard or advertisement.

Add to section 9, chapter 412, Acts of 1891, "Whoever hinders, obstructs, or in any way interferes with an officer or duly authorized agent of the Dairy Bureau in the performance of his duty shall be punished by a fine of fifty dollars

for the first offence and of one hundred dollars for each subsequent offence."

Section 4, chapter 412, Acts of 1891, which provides for a placard upon the wagon of "whoever peddles, sells or delivers from any cart, wagon or other vehicle, upon the the public streets or ways, oleomargarine, etc.," should be amended by striking out the words "upon the public streets or ways."

The municipal license fee should be increased from fifty cents to not over twenty-five dollars.

BUTTER EXHIBITION.

A successful butter exhibition was held by the Dairy Bureau in connection with the winter meeting of the Board of Agriculture at Great Barrington. Every butter maker in the State was invited to contribute to the exhibition; no prizes were awarded, but all the specimens were examined and scored by experts, — Mr. E. A. Harris of Hovey & Co., Boston, who was one of the three judges at the World's Fair at Chicago, and Mr. James Cheesman, the well-known dairy expert. The exhibits were all made by number, and in order to increase the educational value of the exhibition, the judges were requested to use the utmost frankness in criticising. These criticisms were entered on the score cards, — the anonymous features being maintained, — and the public was invited to test the specimens and catechise the judges.

The entries included: —

Creameries,	.	.	.	.	.	.	.	.	.	.	.	12
Private dairies,	.	.	.	.	.	.	.	.	.	.	.	49
Unsalted samples,	.	.	.	.	.	.	.	.	.	.	.	2
Granular samples,	.	.	.	.	.	.	.	.	.	.	.	4
												<hr/>
												67

The season was not propitious for high scores. It was so near the border line between fall and winter that many of the specimens showed wintry imperfections, effects of frosty feed, milk of strippers, or other defects incident to the cattle not being fully settled on a winter basis of food and other conditions.

On the point of flavor (45 being perfect) : —

40 was scored by	.	.	.	.	.	.	.	.	.	.	1
39 was scored by	.	.	.	.	.	.	.	.	.	.	2
38 was scored by	.	.	.	.	.	.	.	.	.	.	6
37 was scored by	.	.	.	.	.	.	.	.	.	.	2
36 was scored by	.	.	.	.	.	.	.	.	.	.	8
35 was scored by	.	.	.	.	.	.	.	.	.	.	8
34 was scored by	.	.	.	.	.	.	.	.	.	.	7
33 was scored by	.	.	.	.	.	.	.	.	.	.	8
32 was scored by	.	.	.	.	.	.	.	.	.	.	8
31 was scored by	.	.	.	.	.	.	.	.	.	.	4
30 and below was scored by	.	.	.	.	.	.	.	.	.	.	9
											<hr/> 63

Twenty-five were perfect as to "grain," and thirty-eight were cut from one-half to five points.

Nineteen were perfect in color, and forty-four were cut from one-half to five points.

Only thirteen were imperfect in salt.

Thirty-two were perfect as to package.

After the exhibition, most of the samples were analyzed. The water content ranged from 7.20 to 15.80 per cent.

6 samples had below	.	.	.	.	.	9 per cent of moisture.
8 samples had between	.	.	.	.	.	9 and 10 per cent of moisture.
17 samples had between	.	.	.	.	.	10 and 11 per cent of moisture.
13 samples had between	.	.	.	.	.	11 and 12 per cent of moisture.
8 samples had	.	.	.	.	.	12 per cent or over of moisture.

The amount of salt ranged from 1.40 to 6.95 per cent.

The amount of casein ranged from .49 to 8.24. The sample having the extraordinary amount of 8.24 per cent of casein was terribly rancid. Thirty-six of the fifty-two samples had less than 1 per cent of casein.

The amount of butter fat in the samples analyzed ranged from 79 per cent to 88.90.

3 samples had from	.	.	.	.	.	79 to 80 per cent.
2 samples had from	.	.	.	.	.	80 to 81 per cent.
1 sample had	.	.	.	.	.	81.40 per cent.
6 samples had from	.	.	.	.	.	82 to 83 per cent.
5 samples had from	.	.	.	.	.	83 to 84 per cent.
6 samples had from	.	.	.	.	.	84 to 85 per cent.
10 samples had from	.	.	.	.	.	85 to 86 per cent.
8 samples had from	.	.	.	.	.	86 to 87 per cent.
8 samples had from	.	.	.	.	.	87 to 88 per cent.
3 samples had	.	.	.	.	.	88 per cent and above.

TESTS OF MILK AND CREAM.

During the year three hundred and six samples of whole milk, cream, buttermilk and skim-milk have been tested for the amount of butter fat they contained, using the Babcock milk tester. Many of these tests have been made at public meetings, as an object lesson on the varying quality of milk. The following is the result from testing the milk of individual COWS : —

Per Cent of Fat.	Per Cent of the Tests.	Per Cent of Fat.	Per Cent of the Tests.
1.80	1	5.20 to 5.40	3
2.40	2	5.40 to 5.60	2
2.60	1	5.60 to 5.80	2
2.80	0.5	5.80 to 6.00	1
3.00	2	6.00	0.5
3.20 to 3.40	4	6.20	4
3.40 to 3.60	9	6.40	1
3.60 to 3.80	7	6.60	1
3.80 to 4.00	10	6.80	2
4.00 to 4.20	9	7.60	2
4.20 to 4.40	7	7.80	5
4.40 to 4.60	6	8.20	5
4.60 to 4.80	6		—
4.80 to 5.00	10		100
5.00 to 5.20	6		

Tests of herd milk resulted as follows : —

Per cent of Fat.	Per Cent of the Tests.	Per cent of Fat.	Per Cent of the Tests.
2.80	3	4.40	20
3.20	3	4.60	10
3.40	3	4.80	10
3.60	6	5.20	10
3.80	12	5.80	6
4.00	11		—
4.20	6		100

Cases where the milk was known to be abnormal have been omitted from the above tabulation. For instance, one sample tested 8.40 per cent of fat, which proved to be the milk of a high-grade Jersey which had been milked a year, and was giving only two and a half quarts per day. Tests have been made of the same milk under different conditions which are not included in the above tabulation: milk from the top of a can which had been standing less than half an hour tested 4.20 per cent, and from the bottom of the can 4 per cent;

from a can which had been standing four hours, milk from the top tested 5.40 per cent of fat and from the bottom 4.80. The bottom of a can from which the top had been poured as needed for domestic use tested only 1.60 per cent of fat. Several specimens of strippings tested from 8.20 to 14 per cent; and samples from the first of several milkings went as low as 1.20 per cent of fat.

Sixty-four per cent of the samples of individual milk stood between 3.40 and 5 per cent of fat, and 85 per cent of the samples were unquestionably above the standard of 13 per cent of total solids.

In the case of herd milk the extremes of 2.80 and 5.80 lead us to point to them as object lessons of the tendency of breeding for a definite purpose, to wit, in the one case quantity and in the other quality. One represents the tendency in producing sale milk for a city market, and the other the result of producing milk for a butter or cream trade. With such contradictory motives influencing the producer, the importance of some standard for the protection of the consumer is evident.

The specimens of cream tested showed an amount of butter-fat ranging from 10.60 per cent to 42 per cent. With the increasing demand for cream by the city trade, it is apparent from the above range that the door is open for much dishonesty. A legal standard — as in the case of milk — may become necessary. But much better would be the introduction of the system of selling on quality, the producer or dealer guaranteeing on the label of the bottle or can a certain per cent of richness. The extreme figures given above are outside the ordinary limits; the majority of the samples tested between 15 and 20 per cent. Minnesota has a law prohibiting the sale of any cream having less than 20 per cent of fat.

Samples of buttermilk tested ranged from 2.80 per cent of fat to a mere trace, hardly measurable by the Babcock tester. Over two-thirds of the samples had .20 per cent or under.

Samples of skim-milk ranged from 2.60 per cent of fat to an immeasurable trace. Over half were .10 per cent or below.

In the above cases of skim-milk and buttermilk where too great an amount of fat was going to waste, the educational work of the Bureau was of good service.

MILK STANDARD.

The question of the milk standard was before the last Legislature, and the House passed an act to reduce the standard, but it was killed in the Senate. The Massachusetts standard of 13 per cent is higher than that of a majority of the States. But is not higher than an average of the analyses of many thousands of samples of milk in all parts of the country. But an average implies that there may be quite a considerable number of cows which do not come up to the mark, and possibly much trouble and loss would result if the law were to be literally enforced. But laws are not enforced in such a manner. Courts will not entertain cases in which the evidence is not positive enough to render conviction reasonably certain. A shrewd lawyer, sharp at cross-questioning, may throw a little uncertainty on a chemical analysis within narrow limits. No man could be convicted whose milk analyzed 12.99 per cent of solids, nor 12.90. The analysis must show a result enough below the standard to convince the court beyond a reasonable doubt that the milk was adulterated actually or constructively. But this leeway lets in so many more herds that it reduces very materially the possibility of oppression. If, however, the legal standard should be reduced, in the practical operation of the law the minimum for standard milk would be consequently reduced. Many plausible arguments can be adduced against an arbitrary statute standard, and possibly in the future it will be so modified that all milk will be sold on a guarantee of actual quality. But that time is not yet; and the practical question for consideration is, whether under existing conditions the advantages of the present standard do not more than offset the evils. The present law and its efficient enforcement—so far as Boston is concerned—means more confidence on the part of the consuming public, and hence a greater consumption. If the standard were lowered, it is more than probable that much milk would be correspondingly extended so as to bring it down to the standard, thereby increasing the surplus just so much, while popular confidence might be correspondingly weakened and the demand decreased.

SUPREME COURT OLEOMARGARINE DECISIONS.

The Statute of 1891, chapter 58, which makes a distinction between oleomargarine which is an imitation of yellow butter and that which is not, and which statute is directed only towards oleomargarine of the former class, is not repealed by the Statute of 1891, chapter 412, section 1, which is directed to the distinct fraud of selling or offering to persons calling for butter something besides butter. The fact that two statutes, similar in their nature and purpose, were both passed at the same session of the Legislature, and took effect on the same day, is strong evidence that they were intended to stand together.

The enactment of a statute which forbids the manufacture and sale of oleomargarine which is made in imitation of yellow butter, though such oleomargarine has been imported from another State, is a valid exercise of the police power which remains in the several States, and it is not in violation of the constitutional provision giving to Congress the power to regulate commerce among the several States. (*Commonwealth v. Huntley et al.*; *Benjamin A. Plumley's case*, 156 Mass. 236.)

The Statute of 1886, chapter 317, section 4, requires that every person who conveys oleomargarine or butterine in carriages, or otherwise, for the purpose of selling the same in any city or town, shall be licensed by the inspectors of milk of such city or town to sell the same within the limits thereof. But the remainder of the section makes it clear that it was intended to apply only to sales from carriages or other vehicles. As the present complaint has no allegation that the defendant carried or exposed the articles in a carriage or other vehicle, it could not be sustained as a complaint under the Statute of 1886, chapter 317, section 4, and we consider it as based upon the Public Statutes, chapter 68, section 16. So considered, it cannot be sustained. Oleomargarine and butterine are provisions. The word includes all articles of food. The articles with which it is charged the defendant went about, and exposed and sold, are, therefore, included among those which any person may go about selling or exposing for sale under the authority of the Public Statutes, chapter 68, section 1; and the acts charged are not prohibited by the Public Statutes, chapter 68, section 16. (*Commonwealth v. Lutton*, 157 Mass. 392.)

A complaint on the Statute of 1886, chapter 317, section 1, charging the defendant with selling imitation butter at retail without a descriptive wrapper, need not allege that the sale was actually made by the defendant's agent. At the trial of such a complaint there was evidence that the sale was made by the

defendant's agent, acting within the scope of his employment, and that he was supplied with wrappers properly marked for covering the article sold; and the presiding judge refused to instruct the jury, as requested by the defendant, that, if the agent's failure to use the wrappers was the result of inadvertence on his part, and not intentional, the jury would not be justified in convicting the defendant. *Held*, that the defendant had no ground of exception. (Commonwealth v. Gray, 150 Mass. 327.)

The defendant had for sale in his provision store oleomargarine colored in imitation of yellow butter. It was in a closed and covered refrigerator, and could not be seen by customers, but there was in the store a sign to the effect that oleomargarine was sold there. Upon the occasion to which the complaint relates none of the substance was sold or produced to view, except that a sample was taken from the refrigerator by an agent of an official inspector. The defendant was found guilty in the superior court. The supreme court ordered the verdict set aside, for the following reason: The case turns upon the meaning of the words "expose for sale" in the statute under which the complaint was drawn. The purpose of the statute is to prevent deception in the manufacture and sale of imitation butter, and the statute provides that no person "shall render or manufacture, sell, offer for sale, expose for sale or have in his possession with intent to sell" certain articles. The phrase to be construed is perhaps susceptible of more than one meaning. Whenever goods are placed for convenient delivery upon expected sales they are put out and in one sense exposed for sale, whether visible to customers or not. But in our opinion the words are not so used in the statute under consideration. The prohibited articles are designed and adapted to deceive the eye; and, because their appearance is likely to induce those who see them to buy them as the genuine butter of which they are in imitation, there is special reason for prohibiting their exposure to view. The language is so full that it is not necessary to give it a strained construction in order to make the statute effective. Offering to sell, and having in possession with intent to sell, are likewise prohibited in the same clause and under the same penalty, so that it is easy for the pleader to select language which describes the offence with reasonable accuracy. Similar words are used in the statutes relating to milk and to intoxicating liquors; but as in such cases the charge of exposing for sale is uniformly joined with that of illegal keeping, and as such a complaint charges but one offence and is supported by proof of either act (Commonwealth v. Nichols, 10 Allen, 199; Commonwealth v. Dolan, 121 Mass. 374), it has not been necessary for this Court to

construe the phrase. Some of the decisions, however, intimate more or less clearly that in the statutes concerning liquors it means "expose to view." (*Commonwealth v. McCue*, 121 Mass. 358; *Commonwealth v. Atkins*, 136 Mass. 160.)

Under the English statute (50 and 51 Vict. C. 29, S. 4) it has been held that margarine kept for sale upon the counter of a shop, but behind a screen hiding it from the view of the customers, is not exposed for sale (*Crane v. Lawrence*, L. R. 25 Q. B. D. 152); and that parcels of margarine placed upon a counter or shelf, in view of customers, are exposed for sale, although so wrapped in paper that the margarine cannot be seen. (*Wheat v. Brown*, 1 Q. B. D. 1892, 418.)

Whether, if the defendant had kept the prohibited article in closed tubs or in paper, so that the packages were visible as articles of merchandise on sale in his store, although the oleomargarine itself could not be seen, he would thereby have exposed it for sale, we do not decide. The contention that the article was not prohibited because it was in imitation of artificially colored butter, as well as of genuine butter, at its best needs no consideration. (*Commonwealth v. Byrnes*, Suffolk, ss., 158 Mass. 172.)

The statute requires a placard to be placed "on both sides" of the vehicle. The defendant's wagon was a covered one, with the front and rear ends open. On the inside of the cover on each side was a placard, in form and size such as the statute requires. These placards could be seen from the front and rear of the wagon, but could not be seen from the sides thereof. There were no placards on the outer sides of the wagon. The supreme court said: "We are of opinion that placing the placards on the inside of the cover of the wagon was a mere device to evade the manifest intent of the Legislature."

The defendant also contended that the commissioner of internal revenue has made certain regulations which require the place of business of a person intending to sell oleomargarine to be stated, and that the license issued to him states the place; and it stated that selling from a wagon is not allowed. Hence it was argued that, as our statute compels a man to do that which is illegal and criminal under the federal law, our statute is unconstitutional and void.

The court said: "There are several answers to this argument. The regulations of the commissioner of internal revenue are not made part of the report in this case; and we cannot assume the facts to be as stated by the defendant. There is nothing in the act of Aug. 2, 1886, which is inconsistent with our law. The authority given to the commissioner of internal revenue to make

all needful regulations for the carrying into effect of the act does not authorize the imposition of a penalty by a regulation where none is imposed by the act. (*United States v. Eaton*, 12 Sup. Ct. Rep. 764.) If the defendant had a license under the act of Aug. 2, 1886, and has paid a tax, this affords him no immunity. Section 3 of that act, by incorporating section 3,243 of the U. S. Revised Statutes into it, expressly repels the inference that the payment of such a tax will legalize the traffic, and implies that the prohibition or regulation of such traffic by State legislation is permissible." (*State v. Newton*, 21 Vroom, 534 ; *Commonwealth v. Crane*, Suffolk, ss., March, 1893, 158 Mass. 218.)

The Statute of 1891, chapter 412, section 5, requires every person who furnishes, or causes to be furnished, to a guest in a restaurant or a hotel, or at a lunch counter, oleomargarine or butterine in the place or stead of butter, to notify him that the substance furnished is not butter. The defendant was the proprietor of a restaurant at which oleomargarine was furnished to one Quinn, in the place or stead of butter. No oral notice was given to him. There were signs in conspicuous places in the restaurant bearing the words, "Butterine used only here," and on the tables were bills of fare on which were printed the words, "Only fine butterine used here;" but Quinn saw neither of the signs, and did not examine the bill of fare, and so had no actual notice that the substance furnished him was not butter. Upon these facts the jury returned a verdict of guilty; the defendant excepted and the supreme court overruled the exception, saying: "If he had read the signs, or the statement printed on the bill of fare, he would have had sufficient notice; for, if knowledge that the substance furnished is not butter is in any way effectually communicated to the guest, the law is complied with. The statute does not require a distinct statement, either oral or written, to be given to each guest on every occasion when he is furnished with oleomargarine or butterine in the place or stead of butter, but is satisfied if, by any act of the person who furnishes it or causes it to be so furnished, the guest is made aware of the fact that the substance furnished is not butter." (*Commonwealth v. Stewart*, Suffolk, ss., May, 1893, 159 Mass. 113.)

Dealers in oleomargarine in this Commonwealth may often receive packages of oleomargarine from manufactories in other States marked according to the laws of the United States and not according to the laws of this Commonwealth. If, on receiving such packages, they store them with the intention of marking them as required by our statutes before they either expose them for sale, or sell them or intend to sell them, there is no violation of our laws.

It was a question of fact, then, whether the defendant had in his possession, with intent to sell, packages of oleomargarine not marked as required by our statutes. The exceptions recite that "the tub in question was not on the date of the offence alleged in the complaint exposed for sale, nor was it so situated that it could be seen by customers of the defendant;" and that "it also appeared from the evidence that the defendant had bought said package for the purpose and with the intention of selling the said oleomargarine contained therein at retail in said store, but that he did not intend to sell the oleomargarine contained in this tub, or expose the same for sale until the marks had been examined, and if not marked in accordance with law to mark the tub before opening the same." Taking these facts to be true, we are of opinion that the jury were not warranted in finding the defendant guilty. They show that the defendant had no intention of selling the oleomargarine in the form which it was in, but was storing it with the intention of properly marking the package, if it was not already properly marked, before he offered the oleomargarine for sale or intended to sell it. Under complaints for keeping intoxicating liquor with intent unlawfully to sell it, the intent is a question of fact to be proved (*Commonwealth v. Ham*, 150 Mass. 122); but because of the absolute prohibition against selling without a license, the intent to sell may be often inferred from facts which would not warrant the inference of an intent to sell other merchandise in the form in which it was found, when defendant had a right to sell it if it was properly marked, and had the right to so mark it after receiving it and before he exposed it for sale or intended to sell it. (*Commonwealth v. Mills*, Bristol, ss., November, 1892, 157 Mass. 405.)

The only contention made in the argument before this court on the motion to quash the complaint is that the complaint should have been made by an inspector of milk or by the treasurer of the town in which the offence was committed. The Legislature has prohibited unqualifiedly the sale, exposing for sale, or having in possession with intent to sell, oleomargarine, except under certain conditions; and it is to be presumed that it has done this to promote the welfare generally of the inhabitants of the Commonwealth. (See Statute of 1890, chapter 440, section 57; Statute of 1890, chapter 416, section 1.) But it is not to be inferred that the Legislature, merely by making it the duty of certain officers, to enforce penal laws of general application, intended that the enforcement should be dependent upon the discretion of these officers. The motion to quash the complaint was rightly overruled. (*Commonwealth v. McDonnell*, Bristol, ss., November, 1892, 157 Mass. 407.)

Oleomargarine was exposed for sale in the original package, namely, a tub, the top of the cover of which had been duly marked, as well as the side and bottom, but from which the cover had been removed, disclosing the superficial surface of the oleomargarine without any mark. *Held*, that the terms of the Statute of 1886, chapter 317, section 1, had been complied with. (*Commonwealth v. Bean*, 148 Mass. 172.)

SUPREME COURT MILK DECISIONS.

The fact that a collector of samples makes a purchase of milk in a restaurant and retains a portion thereof for analysis, without disclosing that he is such a collector, and without giving to the person from whom it was purchased an opportunity to ask for a sealed sample, will not render evidence incompetent to show that the milk so purchased was below the legal standard. (*Commonwealth v. Coleman*.)

The provisions of section 2, chapter 318, Statute of 1886, apply to the keeper of a hotel who supplies milk to his guests to be drunk by them on the premises.

A principal is responsible under the statute for a sale made by his servant, although he was not present, and did not consent to or know of the particular sale, the servant not acting in violation of orders. (*Commonwealth v. Vieth*, 155 Mass.)

Under the Public Statutes, chapter 57, section 5, as amended by the Statutes of 1886, chapter 318, section 2, relating to the adulteration of "milk," it is equally an offence to have in one's possession skimmed milk containing a foreign substance with intent unlawfully to sell the same. (*Commonwealth v. Wetherbee*, 155 Mass.)

On a complaint for the sale of milk not of good standard quality, evidence that the milk was delivered under a special contract is immaterial.

If a buyer of milk takes a portion to a milk inspector, the latter may testify on the trial of such a complaint as to the results of his analysis. (*Commonwealth v. Holt*, 146 Mass. 38.)

At the trial of a complaint, on the Statute of 1886, chapter 318, section 2, for selling milk not of the standard quality, there being evidence that the milk was skimmed milk, and sold from a measure duly marked, the jury were instructed that the defendant would be liable unless he sold the milk not as pure milk, but as skimmed milk, and, further, that he would be liable unless the buyer had notice or knowledge that the milk was skimmed milk. *Held*, that the instruction was erroneous. (*Commonwealth v. Smith*, 149 Mass. 9.)

Dennis J. Quinn, a duly appointed agent of the Boston inspector of milk, purchased a half-pint of cream, which was delivered to said Quinn by the defendant. The analysis of said substance so sold and delivered as cream showed that it contained an added foreign substance, to wit, boracic acid, a compound of boron.

The jury returned a verdict of guilty, and defendant excepted. The Supreme Court overruled the exception, saying: "The word milk in the Public Statutes, chapter 57, 'of the inspection and sale of milk,' is shown by section 7 to include milk from which no part of the cream has been removed; and we are of the opinion that it is used as a general name, and in a sense broad enough to include cream. The offence under section 5, of having in one's possession, with intent to sell, milk to which a foreign substance has been added, is committed by having, with that intent, cream to which boracic acid has been added." (*Commonwealth v. Gordon*, Suffolk, ss., April, 1893.)

Public Statutes, chapter 57, section 2, so far as it authorizes inspectors of milk to enter all carriages used in the conveyance of milk, and, whenever they have reason to believe any milk found therein is adulterated, to take specimens thereof for the purpose of analyzing or otherwise satisfactorily testing the same, is constitutional. (*Commonwealth v. Carter*, 132 Mass., 12.)

1. A person may be convicted of selling adulterated milk, under Public Statutes, chapter 57, section 5, although he did not know it to be adulterated; and an averment in the indictment that he had such knowledge may be rejected as surplusage.

2. It is not necessary in such indictment to aver that the milk was cow's milk.

3. An indictment alleging a sale of adulterated milk to a woman is not defeated by proof that she was married and was acting as agent for her husband, if the seller had no notice, express or implied, of these facts.

4. An indictment under Public Statutes, chapter 57, section 5, which charges that the defendant sold a certain quantity of "adulterated milk, to which a large quantity—that is to say, four quarts—of water had been added," is not bad for duplicity. (*Commonwealth v. Farren*, 9 Allen, 489.)

1. An indictment which alleges that the defendant "did unlawfully keep, offer for sale, and sell" adulterated milk, charges but one offence.

2. In support of such indictment, one who in a great many instances has used a lactometer for the purpose of testing the quality and the purity of milk may testify to the result of an experiment made by him with the same lactometer upon the milk

in question, although no evidence is offered as to the character of the instrument. (*Commonwealth v. Nichols*, 10 Allen, 199.)

At the trial of an indictment on Public Statutes, chapter 57, section 5 (Statute of 1868, chapter 263), for selling "adulterated milk, there was evidence that the defendant [who was a son of the owner of a milk route], with a companion who was in the same employment with himself, knowingly adulterated milk on its way for distribution to his father's customers, and then having charge, with his companion, of its distribution from the wagon on which it was conveyed upon the route, caused a can of it to be delivered to one of the customers by the hand of his companion. *Held*, that he had no ground of exception to instructions to the jury; that in the absence of proof of any previous contract to supply milk to the customer, the delivery might be deemed an act of sale; nor to an instruction framed on a supposition that the jury might find that he was in the employment of his father, although there was no averment in the indictment to that effect." (*Commonwealth v. Haynes*, 107 Mass., 194.)

A person may be convicted of selling adulterated milk, upon a complaint under Public Statutes, chapter 57, section 5 (Statute of 1880, chapter 209, section 3), without allegation or proof that he knew it to be adulterated. (*Commonwealth v. Evans*, 133 Mass., 11.)

A complaint, under Public Statutes, chapter 57, section 5, alleging that the defendant, at a time and place named, had in his possession a certain quantity, to wit, one pint of adulterated milk, containing less than thirteen per cent of milk solids, with intent then and there unlawfully to sell the same, is sufficient, without further alleging that the milk was analyzed and found on analysis to contain less than thirteen per cent of milk solids. At the trial of a complaint, under Public Statutes, chapter 57, section 5, alleging that the defendant had in his possession adulterated milk, to wit, milk containing less than thirteen per cent of milk solids, with intent to sell the same, it is immaterial in what manner the quantity of milk solids has been reduced below thirteen per cent, if the intent is to sell the milk as pure milk, and not as skimmed milk. (*Commonwealth v. Bowers*, 140 Mass., 483.)

Public Statutes, chapter 57, section 9 (Statute of 1880, chapter 209, section 8), providing that "in all prosecutions under this act," for selling adulterated milk, "if the milk shall be shown upon analysis to contain more than eighty-seven per centum of watery fluid, or to contain less than thirteen per centum of milk solids, it shall be deemed for the purpose of this act to be adulterated," is constitutional. (*Commonwealth v. Evans*, 132 Mass., 11.)

A complaint, under the Public Statutes, chapter 57, sections 5, 9, alleging that the defendant, at a time and place named, had in his custody and possession a certain quantity, to wit, one pint, of adulterated milk, to wit, milk then and there containing less than thirteen per cent of milk solids, with intent then and there unlawfully to sell the same, is sufficient. (*Commonwealth v. Keenan*, 139 Mass., 193.)

The Public Statutes, chapter 57, section 10, do not prohibit any person not an inspector of milk from making a complaint for a violation of the provisions of the chapter.

A complaint, under the Public Statutes, chapter 57, section 5, alleging that the defendant sold one pint of adulterated milk, to wit, milk containing less than thirteen per cent of milk solids, is not supported by proof that he sold the milk as skimmed milk out of a tank marked as required by section 7, although the milk was watered.

A complaint under Public Statutes, chapter 57, section 5, alleging a sale of adulterated milk, to wit, milk containing less than thirteen per cent of milk solids, is supported by proof of a sale of milk which, by the removal of a part of the cream, has been reduced in solids below thirteen per cent, unless the milk was sold as skimmed milk, and out of a vessel, can or package marked as required by section 7; and it is not necessary that a complaint charging such an offence should be drawn under section 6. (*Commonwealth v. Tobias*, 141 Mass., 129.)

At the trial of an indictment on Public Statutes, chapter 57, section 5, charging the defendant with having adulterated milk in his possession, with intent unlawfully to sell the same, an analyst in the employ of the inspector of milk may testify to the result of his analysis of the milk taken from the defendant from memory, using a memorandum made by him at the time of analysis to refresh his memory, without further proof that the requirements of the Public Statutes, chapter 57, section 2, as amended by the Statute of 1884, chapter 310, section 3, have been complied with. (*Commonwealth v. Spear*, 143 Mass. 172.)

At a trial of an indictment on the Public Statutes, section 5, charging the defendant with having adulterated milk in his possession, with intent to unlawfully sell the same, an analyst in the employ of the inspector of milk, who analyzed the milk taken from the defendant, testified that he reserved a portion of the milk so taken, by putting it into a bottle, which he corked and sealed. A chemist, to whom the analyst delivered the portion of the milk so reserved, testified, for the defendant, that the bottle was not sealed. The defendant asked the judge to rule that, if the bottle

was corked only, it was not a compliance with the requirement of the Statutes of 1884, chapter 310, section 4, as to the sealing of such reserved portion. The judge declined so to rule, and instructed the jury that they might consider the evidence as bearing upon the credibility of the government witness. *Held*, that the defendant had no ground of exception.

If, at the trial of an indictment on the Public Statutes, chapter 57, section 5, charging the defendant with having adulterated milk in his possession, with intent to unlawfully sell the same, an analyst in the employ of the inspector of milk of a city testifies that he added, for the purpose of preserving it, a few drops of carbolic acid to the sample reserved from milk delivered to him for analysis, it is a question of fact for the jury whether the reservation of the sample was in accordance with the requirement of the Statute of 1884, chapter 310, section 4. (*Commonwealth v. Spear*, 143 Mass. 172.)

At the trial of a complaint, under Public Statutes, chapter 57, section 5, alleging that the defendant had in his possession adulterated milk, with intent unlawfully to sell the same, the evidence showed that a wagon with the defendant's name and number on it was standing upon a public street in a city at an early hour in the morning; that the defendant's servant was on the wagon, and there were several eight-quart cans in the wagon; that a collector of samples in the employ of the inspector of milk for the city took a sample of milk from one of the cans, which was not marked "skimmed milk," and that an analysis of the milk taken showed that it was below the legal standard. *Held*, that there was evidence of an intent on the part of the defendant to sell the milk, which was properly submitted to the jury. (*Commonwealth v. Smith*, 143 Mass. 169.)

A complaint on the Statute of 1886, chapter 318, section 2, alleging that on the first day of July, 1886, the defendant had in his possession "one pint of milk not of good standard quality, that is to say, milk containing less than thirteen per cent of milk solids, with intent then and there unlawfully to sell the same within this Commonwealth," is sufficient, without negating the exception of the months of May and June.

The Statute of 1885, chapter 352, section 6, provides that section 9 of the Public Statutes, chapter 57 (which relates to the sale of adulterated milk), "is hereby amended so as to read as follows." The Statute of 1886, chapter 318, section 2, provides that section 9 of the Public Statutes, chapter 57, "is hereby amended so as to read as follows." In each section, after the words quoted, there follows a sentence which covers the whole subject of the original section. *Held*, that the Statute of 1886, chapter 318, section 2, was a valid enactment.

The Statute of 1884, chapter 310, section 4, providing for the reservation and sealing, before commencing the analysis, of a portion of the sample of milk taken for analysis, is impliedly repealed by the Statute of 1886, chapter 318, sections 1 and 3. (*Commonwealth v. Kenneson*, 143 Mass. 418.)

The Statute of 1885, chapter 352, section 8, provides that no person shall sell, or have in his possession with intent to sell, skimmed milk below a certain standard, and enacts that whoever violates the provisions of this section shall be punished by the penalties provided in the Public Statutes, chapter 57, section 5. *Held*, on a complaint made under the Statute of 1885, chapter 352, section 8, for an offence committed after the Statute of 1886, chapter 318, section 2, took effect, that, even if the last-named statute repealed by implication the Public Statutes, chapter 57, section 5, the complaint could be maintained. (*Commonwealth v. Kendall*, 144 Mass. 357.)

Placing wax upon the top of the cork in a bottle containing a portion reserved from a sample of milk taken for analysis, and not extending the wax over the mouth of the bottle and thus rendering the bottle air tight, is not a sufficient compliance with the requirement of the Statute of 1884, chapter 310, section 4, that such reserved portion shall be "sealed." (*Commonwealth v. Lockhardt*, 144 Mass. 132.)

An indictment on the Statute of 1886, chapter 318, section 2, alleging that the defendant had in his "possession milk to which a certain foreign substance had been added, to wit, annatto coloring matter," with intent unlawfully to sell the same, is sufficient without naming the quantity. Evidence offered at the trial of such an indictment as to two samples of milk taken from the defendant's possession at substantially the same time is competent, and the government cannot be required at the same time of the offer, if ever, to elect which sample it will rely on. The addition of the annatto coloring matter, whether injurious to health or not, is punishable under the statute. Evidence that the "milk was of low grade" is competent, although it may tend to prove another offence. (*Commonwealth v. Schaffner*, 146 Mass. 512.)

An averment in a complaint under the milk acts, that the defendants were "partners," is mere surplusage, and need not be proved. On such a complaint, evidence that the defendant was on a wagon with a license number on it, and containing milk cans, from one of which was taken adulterated milk, is competent on the issue that he was in possession of the milk to sell it. (*Commonwealth v. Rowell*, 146 Mass. 128.)

FINANCIAL STATEMENT.

Appropriation by Legislature of 1893, . . . \$4,000 00

C. L. HARTSHORN, *Chairman* :—

Travelling and necessary expenses, . . .	\$40 00
Twelve days' services,	60 00

G. L. CLEMENCE :—

Travelling and necessary expenses, . . .	68 00
Twelve days' services,	60 00

D. A. HORTON :—

Travelling and necessary expenses, . . .	35 00
Seven days' services,	35 00

G. M. WHITAKER, *Assistant Executive Officer* :—

Travelling and necessary expenses, . . .	280 38
--	--------

J. W. STOCKWELL, *Agent* :—

Salary,	1,140 00
Travelling and necessary expenses, . . .	731 76

C. C. HALL, *Agent* :—

Services and expenses,	57 34
----------------------------------	-------

JAMES CHEESMAN, *Expert* :—

Services and expenses,	26 08
----------------------------------	-------

E. A. HARRIS, *Expert* :—

Services and expenses,	29 10
----------------------------------	-------

Analyses and tests,	579 00
-------------------------------	--------

Legal services,	43 00
---------------------------	-------

Printing,	95 78
---------------------	-------

Supplies,	56 46
---------------------	-------

<hr/>	<hr/>
\$4,000 00	\$3,336 90

Respectfully submitted,

GEO. M. WHITAKER,

Assistant Executive Officer.

Approved and adopted as the report of the Dairy Bureau.

C. L. HARTSHORN.

GEO. L. CLEMENCE.

DWIGHT A. HORTON.

Boston, Jan. 11, 1894.

512.521178
DIV.
1894
3

FOURTH ANNUAL REPORT

OF THE

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED

UNDER CHAPTER 412, ACTS OF 1891.

JANUARY 15, 1895.

STAT. 10
JAN 30 1895
STATE HOUSE

Commonwealth of Massachusetts.

OFFICE OF THE SECRETARY, BOSTON, Jan. 15, 1895.

Hon. GEORGE V. L. MEYER, *Speaker, House of Representatives.*

SIR: — I have the honor to transmit herewith, for the use of the Legislature, the fourth annual report of the Dairy Bureau of the Massachusetts Board of Agriculture, required under chapter 412, Acts of 1891.

Very respectfully,

WM. M. OLIN,
Secretary.

MASSACHUSETTS
73
STATE HOUSE

614.32M3

II 13n

1894

B

DAIRY BUREAU — 1894-1895.

C. L. HARTSHORN, WORCESTER, *Chairman.*

GEO. L. CLEMENCE, SOUTHBRIDGE.

D. A. HORTON, NORTHAMPTON.

Executive Officer.

W. R. SESSIONS, *Secretary of the State Board of Agriculture.*

Assistant and Acting Executive Officer, appointed by the Governor.

GEO. M. WHITAKER, BOSTON.

REPORT OF THE DAIRY BUREAU.

To the Senate and House of Representatives of the Commonwealth of Massachusetts.

The third year of the existence of the Dairy Bureau has witnessed no change in the membership of the Bureau or its executive officers. The work has continued along the general lines indicated by previous reports, but extended and broadened as a result of increased experience. Additional workers have been employed in both the educational and police departments. But there comes a time when the expansion due merely to the increased effectiveness of greater experience must cease. It costs money to employ lecturers, agents, chemists and others. As we said last year, \$4,000 is a very small sum for the duties imposed on us by statute. In the educational field there is need of additional work, particularly at the present time, when the Cattle Commissioners are doing so much to prevent the spread of tuberculosis; their work is only half done if it is not supplemented by the gospel of cleanliness, pure air and plenty of sunlight. In our report for 1892 we said that the keeping qualities of milk depend on cleanliness; but besides this the germs of disease are kept in abeyance by wholesome food, air, sunlight and clean stables. Then in our police work we can keep several agents profitably employed all of the time. We have been unable to give any attention to the enforcement of the milk laws, but could do much in this direction, to the ultimate advantage of the consumer and producer. We renew our suggestion of last year, that the appropriation for the Bureau be increased, with a repeal of the requirement that the Board of Health expend a majority of its funds on dairy products, — with this object in view: that the Bureau should prosecute commercial frauds, while the

Board of Health should be unhampered in its health work. An increased appropriation will not mean necessarily increased burden on the tax payers, because much will be returned in fines. At present nearly half of our appropriation goes back to the public in that way. If we are given more funds for enforcing the dairy laws, there will be more fines. We have expended all our appropriation this year, and yet have seen much which ought to have been done, but which we were obliged to omit. We recommend that the amount be increased to \$7,000.

COLORED OLEOMARGARINE "AN OFFENCE AGAINST SOCIETY."

The great event of the year has been the decision of the national supreme court that the Massachusetts "anti-color" law "is not repugnant to the commerce clause of the constitution." The court said:—

It is within the power of a State to exclude from its markets any compound manufactured in another State which has been artificially colored or adulterated so as to cause it to look like an article of food in general use, and the sale of which may, by reason of such coloration or adulteration, cheat the general public into purchasing that which they may not intend to buy. The constitution of the United States does not secure to any one the privilege of defrauding the public. The deception against which the statute of Massachusetts is aimed is an offence against society; and the States are as competent to protect their people against such offences or wrongs as they are to protect them against crimes or wrongs of more serious character. And this protection may be given without violating any right secured by the national constitution and without infringing the authority of the general government. A State enactment forbidding the sale of deceitful imitations of articles of food in general use among the people does not abridge any privilege secured to citizens of the United States, nor, in any just sense, interfere with the freedom of commerce among the several States.

The judiciary of the United States should not strike down a legislative enactment of a State—especially if it has direct connection with the social order, the health and the morals of its people—unless such legislation plainly and palpably violates some right granted or secured by the national constitution, or encroaches upon the authority delegated to the United States for the attainment of objects of national concern.

This case was an appeal from the decision of the Massachusetts supreme court. This Commonwealth was represented before the national supreme court by ex-Attorney-General Hon. A. E. Pillsbury, who made a remarkably able argument, — one which has attracted much attention in other States as well as in Massachusetts. The chances were considered somewhat against his contention, because the court had decided that local laws could not prohibit the sale of intoxicating liquors in the original package as brought from some other State. On this decision the oleomargarine interests expected to defeat our law. Mr. Pillsbury maintained that, as this law prohibited the sale of an *imitation product* rather than a distinct or original article, the cases were not parallel, and that the fundamental law of the land has enough of State rights to allow States to regulate and even prohibit the sale of imitations. The national supreme court took this view of the case. The decision is not only of much importance in this State, but is of inestimable value in many other States; they are thanking Massachusetts for her pioneer work and for the ability of her legal representative. The decision is also of importance in establishing a valuable principle in the interplay of State and national governments. As this decision was not handed down until December 10, it has as yet been of little advantage to us, and there has not been enough time for the oleomargarine interest to decide on a definite policy.

Some seem disposed to accept this decision, and are putting on the market an article so light in color that it is not an imitation of the average of butter, though it is an imitation of very pale butter. Others are inclined to fight the law yet further by quibbling over the expression “pure butter” and its color. They claim that pure butter is butter without any artificial coloring matter, that its natural color is very light; that the natural color of oleomargarine is a bright yellow, and therefore that oleomargarine is not an imitation of pure butter. If this argument of a part of the oleomargarine people is sound, it proves that the light-colored goods of the other part are an imitation of pure butter, and hence illegal. It has been seriously maintained that butter from fancy cows fed unusual and costly foods may be

bright yellow, but that such an article is so exceptional and rare that it could not have been meant by the Legislature in alluding to "pure butter."

OTHER DECISIONS.

In a case against Charles H. Russell, for exposing for sale an imitation of yellow butter, his defence was that he exposed for sale the oleomargarine in such a manner as to advise all consumers of its real character. The State supreme court says:—

The proviso that allows the sale of oleomargarine "in such separate and distinct form and in such manner as will advise the consumer of its real character, free from coloration or ingredient that causes it to look like butter," only saves such oleomargarine as is free from coloration or ingredient that causes it to look like butter. The statute did not intend to allow oleomargarine to be made or sold when so colored, whether the particular purchaser was advised of its real character or not.

In a case for delivering oleomargarine made in imitation or semblance of pure butter from a wagon without the proper signs, the defence claimed that there are two kinds of oleomargarine, as recognized by the anti-color law, and that the kind delivered was not in imitation of pure butter. The court decided:—

This statute was not intended to draw fine distinctions between kinds of oleomargarine which all resemble each other, but it requires that every one who thus delivers oleomargarine of whatever sort shall carry along with him upon his vehicle a public notice that he is licensed to sell oleomargarine,—in other words that he shall go under his true colors.

ENFORCEMENT OF THE LAW.

This work has been hampered by the uncertainty during most of the year about the anti-color law; but the other laws have been prosecuted with vigor, as two agents have been at work most of the time collecting evidence. As heretofore, we have done nothing in Boston, that field being so well worked by Dr. Harrington, the city milk inspector, and nothing has been done with the milk laws.

The following is the statistical report of our work : —

Number of inspections,	716
Number of samples taken,	388
Number of cases in court,	104

Of these the results were as follows : —

Guilty,	68
Acquitted,	32
Nolo,	3
Nol. pros.,	1
Total,	<u>104</u>

Of the 32 cases acquitted, 10 were lost by contradictory evidence, 11 on technicalities.

The causes for action were as follows : —

Serving oleomargarine for butter in restaurants,	28
No signs in stores,	21
Selling oleomargarine when butter was called for,	17
Lack of proper signs on tubs,	15
No mark on wrapper,	14
No municipal license,	9
Total,	<u>104</u>

This is twice as much as we have done in any previous year. Our policy has been to secure compliance with the laws with as little distress or seeming persecution as possible ; and no objections have been raised to putting cases on file when the judge was satisfied that good reasons therefor existed. Fines aggregating nearly \$2,000 have been imposed.

MILK INSPECTORS.

The statutes give town and city milk inspectors concurrent jurisdiction with the Dairy Bureau ; but the report of their work is only to the local authority, and hitherto there has been no means of presenting this information to a larger constituency. In many cases these local inspectors get only a nominal salary, and hence do but little aggressive work. We have endeavored to co-operate and work with them to mutual advantage, and we are indebted to many inspectors for much information and assistance. Their work is for the

most part confined to the milk laws. The best work is done in Boston, where ample funds warrant the securing of excellent ability. From Dr. Harrington's last published report we extract the following information : —

Number of samples of milk examined,	13,623
Number of samples of butter and oleomargarine,	899

During the year complaints were entered in court as follows : —

For milk not of good standard quality,	142
For milk not of good standard quality (restaurant cases),	125
For skimmed milk not of good standard quality,	3
For adulterating milk with annato, caramel or boracic acid,	23
For violating license law,	18
For sales of oleomargarine not properly marked,	48
For violation of the oleomargarine license law,	17
For oleomargarine wagons not properly marked,	9
For exposing oleomargarine in stores without signs,	5
For sales of oleomargarine as butter,	51
For sales of imitation butter,	3
For serving oleomargarine in restaurants without notice to guests,	109

The Cambridge inspector, Dr. F. A. Dunbar, reports 1,882 samples of milk collected, of which 262 were below standard quality; 179 warnings were sent out; 75 samples of butter were purchased, of which 3 proved to be oleomargarine. The inspector reports that the quality of milk procured from stores and teams is on the whole improving; skimming and watering constitute the usual forms of adulteration.

The Lowell inspector, Thomas O. Allen, reports 1,258 milk inspections, with 26 warnings, and 17 complaints for having in possession, with intent to sell, milk not of good standard quality; convictions, 15.

The Lynn inspector reports 2,236 inspections of milk, with 18 complaints in court, resulting in 17 convictions.

The Holyoke inspector, James K. Morrill, reports 58 inspections of milk and 1 prosecution.

H. M. Hartshorn of Malden reports 136 inspections of milk and 1 prosecution. He recommends a law which should establish a legal standard for light cream to be sold

in packages of not less than one gallon, and another for small packages of heavier cream for family use. He reports a continual increase in the cream business.

The Worcester inspector, J. P. Streeter, reports 138 samples of milk taken, of which only 3 were below standard.

In New Bedford Dr. D. C. Ashely took 650 samples of milk, and 1 complaint was made after a warning. Another conviction was for feeding swill.

In Chelsea the milk inspector took 950 samples; issued 30 warnings; 15 cases were taken into court and 9 convicted.

NEED OF LAW.

Another year's experience convinces us more than ever of the need of laws to regulate the sale of imitation butter, and we renew the suggestions of previous reports. The word "imitation" conveys the idea of deceit and imposition, and the actual business comes as close as is possible to the line between honesty and dishonesty when it does not actually cross over. The temptation to deceive is strong and always present. "Butterine," the name now coming to be generally used (although the national law uses the word "oleomargarine"), is significant of deception. The gradual abandonment of the word "oleomargarine" and the substitution therefor of "butterine" speaks volumes for the nature of the business. In England the use of the word "butterine" is prohibited by law, and we recommend it here. In one large English city the Board of Trade condemned the use of such affixes as "ette" and "ine" for textile fabrics, because of their deceptive nature. For the purpose of uniformity in existing laws, and to prevent the raising of any question growing out of an apparent lack of harmony, we recommend that section 21 of chapter 56 of the Public Statutes be declared applicable to all subsequent legislation.

EDUCATIONAL.

The assistant executive officer has spoken at public meetings 37 times, — chiefly upon milk, its composition, variation, keeping qualities and kindred topics. When the im-

portance of the meeting would warrant, additional speakers have been employed. Professor Conn of Connecticut, one of the most advanced bacteriologists of the age, came to Massachusetts under the auspices of the Bureau, to explain to a meeting of butter makers his experiments and conclusions. Experiments have been tried at the West Dudley creamery with some of his culture, at the suggestion of the Bureau.

BABCOCK MILK TESTER.

Work in illustrating the importance of the Babcock milk tester has continued. Much effort has been expended in impressing the fact that milk should be valued by the amount of solid matter that it contains,—the Babcock tester furnishing an accurate, cheap and simple means of ascertaining this information. As a result of this influence, several agricultural societies have based their milch-cow premiums in a measure on the quality of the cow's product. During the year the acting executive officer has tested 448 samples; 5 more have been referred to a chemist for fuller examination. Most of these tests were made publicly, as object lessons in the course of addresses on the character of milk.

Some of these samples were taken for the purpose of studying abnormal conditions. For instance, a sample from a sick heifer from a fine butter family tested as low as 1.8 per cent. of fat. The milk from the top of a can tested 8.2 per cent. of fat, while that from the bottom of the same can tested only 2 per cent. Milk from strippings and the last of milkings ranged from 7 to 12 per cent. The following is the result of the ordinary samples:—

2.6 and 3.0 per cent. of fat,	. . . .	1 per cent. of samples.
3.2 and 3.4 per cent. of fat,	. . . .	8 per cent. of samples.

[Below the legal standard, 9 per cent. of samples.]

3.6 and 3.8 per cent. of fat, on the line of the		
legal standard,	. . . .	20 per cent. of samples.
4.0 and 4.2 per cent. of fat,	. . . .	18 per cent. of samples.
4.4 and 4.6 per cent. of fat,	. . . .	13 per cent. of samples.
4.8 and 5.0 per cent. of fat,	. . . .	13 per cent. of samples.
5.2 and 5.4 per cent. of fat,	. . . .	14 per cent. of samples.
5.6 and 5.8 per cent. of fat,	. . . .	7 per cent. of samples.

5.8 and 6.0 per cent. of fat,	. . . .	3 per cent. of samples.
6.1 and 6.2 per cent. of fat,	. . . .	3 per cent. of samples.
6.4 and 6.8 per cent. of fat,	. . . .	2 per cent. of samples.

[Above the standard, 73 per cent. of samples.]

Samples of cream tested have ranged from 14.6 per cent. to 20 per cent. of fat. The buttermilk tested averaged .3 per cent. of fat, and the skimmed milk ranged between .8 and .6 per cent.

In one instance a visit was made to a farm whose proprietor was having trouble with the Boston milk contractors because the milk produced by him was below the standard. Each cow in the herd was tested, with the following result:—

No. 1,	2.4 per cent.	No. 7,	3.2 per cent.
No. 2,	2.6 “	No. 8,	3.3 “
No. 3,	2.8 “	No. 9,	3.6 “
No. 4,	2.8 “	No. 10,	3.8 “
No. 5,	3.0 “	No. 11,	4.0 “
No. 6,	3.0 “	No. 12,	4.0 “

The average of the mixed milk of the herd was 3.1 per cent.

The Bay State Agricultural Society in June offered a prize for the milch cows which would produce the greatest amount of milk solids in two days. The testing was to be done at home, free from the distracting influences of the average cattle show. This was a decidedly advance step in agriculture, and one in keeping with the aims of the Bay State Society. The Massachusetts Society for Promoting Agriculture offered to help out on the expense of the premiums, and the assistant executive officer of the Dairy Bureau offered to do the work of testing the milk. This novel and educational offer did not attract as much attention as its merits deserved, and it was hard work to secure five entries; only one was ready for examination during the summer and fall before the executive officer's increasing duties of the early winter precluded the attention to this extra work. The Guernsey herd of Herbert Merriam, Esq., of Weston, was tested, with the following result:—

	Pounds Milk.	Per Cent. Solids.	Pounds Fat.	Pounds Total Solids.
Polly of Concord, . . .	32.81	15.50	1.82	5.09
Golden Lily, . . .	37.75	15.03	1.97	5.68
Polly of Lincoln, . . .	37.06	15.32	2.00	5.69
Rose of Weston, . . .	40.64	14.95	2.06	6.06
Weston Lily, . . .	43.50	14.75	2.15	6.40
Average, . . .	—	15.11	—	5.78
Total, . . .	191.76	—	10.00	—

THE MILK SUPPLY

of the cities of the Commonwealth is one of the most important branches of the food question, both commercially and hygienically. The milk contractors of Boston, whose business includes the “greater Boston,” and is estimated at three-quarters of the entire supply, report the business of 1894 in eight and one-half quart cans as follows:—

	Received.	Sold.	Surplus.
January,	768,883	617,674	151,209
February,	719,864	564,148	155,716
March,	842,882	642,637	200,245
April,	861,458	622,907	238,551
May,	969,331	661,223	308,108
June,	937,188	696,578	240,610
July,	837,425	699,692	137,733
August,	779,766	617,220	162,546
September,	716,771	634,269	82,502
October,	779,015	637,329	141,686
November,	722,316	634,792	87,524
December,	770,548	628,952	141,596

TOTALS.

	Received.	Sold.	Surplus.
1891,	7,281,524	6,113,803	—
1892,	9,212,667	7,315,135	—
1893,	9,263,487	7,619,722	1,643,765
1894,	9,705,447	7,657,421	2,048,026

The following figures for other cities are taken from milk inspectors' reports : —

Springfield, 19,000 quarts daily, mostly furnished by three adjoining towns.

Chelsea, 10,664 quarts daily.

Malden, 11,000 quarts daily.

Holyoke, 15,387 quarts daily.

Lynn, 24,000 quarts daily, one-half coming from Portsmouth and Hampton, N. H., in cars, and one-half from dairies of adjacent towns.

MILK STANDARD.

An effort has been made each winter for several years to have the statute standard of milk reduced. Unquestionably many cows in the State produce milk that is below the standard. But it is also a fact that the milk of a great majority from all breeds contains 13 per cent. of solids, — the legal standard. The practical question is, Shall the interests of the majority be sacrificed for the minority? The present law is not perfect; under an ideal condition, all milk would be sold according to its quality; but that is impracticable at present, although we believe that ultimately, with the Babcock test more common and the people more enlightened as to milk values, this result will be reached. But this is not the real point desired by the advocates of the change as we understand it. They desire to get their 12 per cent. milk on the market at the going price, — that is, the price for the 13 per cent. milk.

One point against the present law that is used with much force is the claim that the standard hangs like a sword of Damocles above the head of the innocent farmer, liable at

any moment to descend upon him without either warning or mercy. Facts do not bear this out, however, as reference to the reports of the milk inspectors above will show. Not only do reports of many thousands of analyses from all parts of the country show that average milk contains 13 per cent. of solids, but the results of inspections reported above show that even after the milk has gone to the peddler and the stores ninety-nine samples in a hundred stand the test. Mr. Clemence of the Bureau has been studying the question on his own herd, and gives below the result of five tests of the mixed milk of his cows — grade stock of no particular breed.

DATE.	Cows.	Quarts Milk.	Daily Feed.	Per Cent. of Fat.
Aug. 1,	20	208	Green oats and peas morning and night, dry hay at noon, 2 quarts gluten meal and 4 quarts bran.	4.4
Sept. 1,	21	212	Sweet corn fodder morning and night, hay at noon, grain the same as above.	4.2
Oct. 1,	21	188	Corn fodder and cabbage leaves morning and night, hay at noon, with grain same as above.	4.2
Nov. 1,	20	205	Cabbage leaves in two feeds, hay at noon, with grain same as above.	4.3
Dec. 1,	20	192	Corn and ensilage morning and night (forty pounds a day to each cow), six pounds of hay at noon, and grain the same as above.	4.2

When milk has 3.75 per cent. of fat it is without much doubt up to the standard, so that this milk, if a complete analysis were made, would probably test from 13.50 to 14 per cent. solids.

Financial Statement.

Appropriation by Legislature of 1894, . . . \$4,000

C. L. Hartshorn, Chairman : —

Travelling and necessary expenses,	. . . . .	\$44 00
Services,	. . . . .	60 00

G. L. Clemence : —

Travelling and necessary expenses,	\$62 50
Services,	65 00

D. A. Horton : —

Travelling and necessary expenses,	63 00
Services,	60 00

G. M. Whitaker, assistant executive officer, travelling and
necessary expenses,

Agents, services and expenses,	268 18
Chemical work,	1,870 76
Court attendance,	1,083 50
Educational work,	115 00
Printing,	195 27
Supplies,	57 76
	55 03

\$4,000 00

Respectfully submitted,

GEO. M. WHITAKER,

Assistant and Acting Executive Officer.

Approved and adopted as the report of the Dairy Bureau.

C. L. HARTSHORN.

GEO. L. CLEMENCE.

DWIGHT A. HORTON.

Boston, Jan. 15, 1895

61A.32M3

Div 2

1895

B

FIFTH ANNUAL REPORT

OF THE

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED

UNDER CHAPTER 412, ACTS OF 1891.

JANUARY 15, 1896.

614.32M3

213n

1895

3

DAIRY BUREAU — 1895-96.

C. L. HARTSHORN, WORCESTER, *Chairman.*

GEO. L. CLEMENCE, SOUTHBRIDGE.

D. A. HORTON, NORTHAMPTON.

Executive Officer.

W. R. SESSIONS, *Secretary of the State Board of Agriculture.*

Assistant to the Secretary and Acting Executive Officer, appointed by the Governor.

GEO. M. WHITAKER, BOSTON.

REPORT OF THE DAIRY BUREAU.

To the Senate and House of Representatives of the Commonwealth of Massachusetts.

The membership of the Bureau has been unchanged during the past year, Mr. D. A. Horton having been reappointed by the governor as one of the three members at large of the Board of Agriculture, and as a member of the Dairy Bureau. The assistant to the secretary of the Board of Agriculture in the work of the Dairy Bureau, as provided for by chapter 412 of the Acts of 1891, is the acting executive officer of the Bureau, the secretary of the Board being the executive officer, *ex officio*, by the same statute. The present incumbent was reappointed last September.

During the year the Bureau has employed permanently two agents who have acted as inspectors, to ascertain how the dairy laws are obeyed, to collect samples and to get evidence of violation of the law. These have been J. W. Stockwell and George F. Baldwin. In accordance with our recommendation of last year, our annual appropriation was increased by the Legislature of 1895 from \$4,000 to \$7,000.

OLEOMARGARINE.

The work of the Bureau in enforcing the laws relative to imitation butter has been statistically as follows:—

Number of inspections of stores and other places of business,	1,901
Number of samples taken,	474
Number of cases in court,	82
Number of convictions,	42

The cases in court were brought for the following violations of the law : —

Serving oleomargarine in restaurants without giving notice,	30
Absence of sign in store,	17
Sales of oleomargarine when butter was called for,	7
Failure to mark exposed contents of opened tub,	7
Sales of yellow oleomargarine,	6
Sales without municipal license,	6
Sales without marked wrapper,	5
Assaults on agents of the Bureau,	3
Delivery from wagon without sign on sides,	1
	<hr/>
	82

These violations of the law were all outside of Boston, as, under the provision of the law requiring us to work in harmony with milk inspectors and the Board of Health, we have left the city of Boston, as has been previously reported, to the milk inspector of that city, Dr. Charles E. Harrington, who has performed his work with great faithfulness and ability.

Cases appealed from the district to the superior court have been settled, in every case but one, by the defendant pleading guilty. In that case the inspector had called for cooking butter and been served with oleomargarine, and the jury failed to agree, as the question was raised whether or not "cooking butter" was a separate and distinct article of commerce by itself, and therefore not what is meant by the statute which prohibits the selling of oleomargarine when butter is called for.

The laws regulating the sale of oleomargarine are such that it is possible for a person, in one sale, to violate a number of different statutes. If he sells yellow oleomargarine when butter is called for, does it up in an unmarked wrapper, and has no sign in the store, four laws are violated ; and usually, where a person is trying to sell oleomargarine deceptively, in order to carry out the deception, he will violate more laws than one. But we find that many district court judges dislike to entertain more than one case based on a single transaction. In a few instances we have found judges who

were unwilling to entertain more than one case against the same person, even when the violations of the law took place on different days, and when there had been distinct sales. On this account the statistical showing of cases in court is not as large as it otherwise would be.

The work of the Bureau in inspecting stores and other places of business, to see how the laws are complied with, and its growth from year to year, are seen in the following table : —

1893,	.	.	.	.	.	.	.	.	382 inspections.
1894,	.	.	.	.	.	.	.	.	716 inspections.
1895,	.	.	.	.	.	.	.	.	1,901 inspections.

This work has covered all parts of the State, except Boston, and, coupled with the efforts of Dr. Harrington * in Boston, has been so thorough that dealers are, for the most part, complying with the law, which still further reduces our number of court cases; but, when a law is so enforced as to prevent crime, the result is more satisfactory to all thoughtful citizens than is the record of a long list of criminal prosecutions.

Very little oleomargarine is now sold in the State illegally.

The decision of the national supreme court, affirming the constitutionality of the State statute which prohibits the sale of any imitation of yellow butter, has been a severe blow to dealers in imitation dairy goods, and has virtually put an end to the business in this State, so far as open sales are concerned. The number of revenue licenses in Massachusetts when the Bureau was created was 211; the number now is 35. The figures from the Boston Chamber of Commerce show that the receipts of oleomargarine for the year 1895 decreased 151,421 packages, as compared with the year previous. The receipts of butter show an increase of

* The cases of the Boston milk inspector for the year ending Jan. 31, 1895, were : —

Sale of oleomargarine not properly labelled,	.	.	.	.	.	4
Exposing oleomargarine for sale, not being licensed,	.	.	.	.	.	5
Sale of oleomargarine, not being registered,	.	.	.	.	.	3
Sale of oleomargarine as butter,	.	.	.	.	.	4
Sale of oleomargarine without posting placard,	.	.	.	.	.	3
Sale of oleomargarine from wagons not properly marked,	.	.	.	.	.	2
Serving oleomargarine in restaurants without notifying guests,	.	.	.	.	.	32

179,379 tubs, not counting the boxes, and the consumption of butter increased very materially.

Although oleomargarine is a substance of "great food value," "a distinct, independent article," pushed on "the merits of its individuality," we find that what the dealers care for, more than the nutritive elements or number of calories of food value, is the yellow color of butter; and, if they cannot have the article colored in imitation of a product which it is not, their occupation is largely gone. Much yellow oleomargarine, however, still comes into the State from Rhode Island, which has been behind all the other New England States in oleomargarine legislation, and is now the centre of operations for a large business in this State. Several manufacturing companies have located in Rhode Island, among them the Vermont Manufacturing Company and the Woodlawn Dairy Company. These have agents in Massachusetts, who leave with boarding-house proprietors and others in manufacturing cities and towns blank orders which when filled out are sent to Rhode Island. The goods are then forwarded to them by express or freight. Sometimes, doubtless, the legal sale takes place in Massachusetts; but to get evidence of this is difficult, and would require much expense for skilful detective work, and often, then, we might have nothing to show for the money expended. The following are two forms of orders used:—

Swift & Co., 252-262 Canal Street, Providence, R. I.

Please send to Swift's colored butterine, price .
Ship by

And oblige,

189 .

Woodlawn Dairy Co., Pawtucket, R. I.

DEAR SIR:— Please send me by express, C. O. D.:—

Tub butterine, lbs., at cts.

Box prints, lbs., at cts.

and oblige,

Yours truly,

Our agents have in a number of cases watched the receipts of oleomargarine at various railroad depots, followed the goods to the place of consumption, and found that they went

chiefly to boarding-houses and fishing schooners. Some oleomargarine goes to hotels and restaurants and some to private families.

Our third and fourth reports called attention to the deceptive style of advertising adopted by many manufacturers of oleomargarine. In the former we reproduced a fac-simile of the trade-mark of one firm, which consisted of a pretty dairymaid, her left arm about a Jersey heifer, and a milk pail in her right hand. The inscription was "Jersey Butterine," and everything about it except the three letters "ine" was suggestive of the dairy.

This wrong has been met by an important order from the internal revenue department at Washington, as follows :—

No manufacturer of or dealer in oleomargarine will be permitted to use any private trade-mark, label, brand, picture illustration or other advertising or descriptive device upon any print, roll or other mold or design of oleomargarine offered for sale, consumption or use, which in any wise conceals the fact that the product is oleomargarine. This rule applies as well to the wooden or paper package or wrapper of any print, roll or other mold or design of oleomargarine.

Under this regulation it will be seen that the use of any trade-mark, label, brand, picture illustration, or advertising or descriptive device representing a cow, dairy farm, or in any other form indicating the oleomargarine to be a product of the dairy, or calculated to induce the belief that it is such dairy product, is inadmissible.

The use of the word "butterine" is also inadmissible, since section 2 of the act of Aug. 2, 1886, prescribes that "butterine" shall be known and *designated* as "oleomargarine."

The advance of time may have rendered the arguments for legislation regulating the sale of imitation butter less keenly realized than when the laws were enacted, and it may be well to restate that all of this legislation has been rendered necessary because : first, yellow oleomargarine is an imitation article ; second, all imitation articles are more or less deceptive, the very word "imitation" signifying misrepresentation ; third, the selling of these goods where no restrictions exist is always attended with considerable actual fraud ; the dealers oppose all legislation which would require the

product to be sold honestly, and, as a rule, deceive the consuming public as far as they can.

It is also worthy of notice that, since the Massachusetts laws were enacted, they have been copied by a number of other States; and this department is frequently requested to furnish copies of our laws to legislative bodies, boards of trade, dairymen's associations, etc., in other States.

PROCESS BUTTER.

The attention of the Bureau has been brought two or three times during the year to various kinds of "process butter," as it is called. This is butter which has been renovated and reworked by some patent process. Analysis shows that it is pure butter, but that it contains more than the normal amount of moisture. One sample was found to contain:—

	Per Cent.
Butter fat,	78.18
Water,	17.18
Suet,	2.32
Curd and other solids not fat,	2.32
	<hr/>
	100.00

This fact, and the varying degrees of moisture reported in butter exhibited at the State fair at Worcester, alluded to later on, bring up again the suggestion whether or not there should be a statute standard for butter; and, while we do not favor making our government paternal beyond proper limits, yet there is a possibility of people being deceived and defrauded in their purchases of even real butter.

MILK LAWS.

The Bureau has done more this year in the line of milk inspection than heretofore, having taken and analyzed 158 samples. No cases have been taken into court, as this was our first year of work in this line. A number of warnings, however, were sent to persons whose milk was below standard. A prominent part of our work in this line this season was in inspecting the milk supply at the various beaches in the vicinity of Boston, including restaurants. The milk in

most cases was quite satisfactory, being fully up to the standard. In one or two cases where milk of very poor quality was found, the inspector on a second visit got milk of much higher quality, in one case almost cream, showing that the dealer had been careless in mixing the milk, giving some customers cream from the top of the tank, while others got skim-milk from the bottom. In such cases warnings were sent.

Some restaurants refuse to sell milk to a guest; a few have skim-milk signs on their milk tanks; and a few cases have been found where the proprietor of a restaurant posted a sign announcing that he sold pure, unadulterated milk, as it came from the cow, but on account of the State law, in order to save himself from liability to prosecution, he advertised all milk which he sold to be skim-milk.

We give below the averages of the samples of milk taken by this department during the year past, the low showing through July and August being due to a number of samples of low-grade milk taken from restaurants at the beaches, to whom warnings were sent, which resulted in an improvement of the quality.

	No. Samples.	Average.
July,	33	12.48 per cent total solids.
August,	10	12.57 " " "
September,	21	13.08 " " "
October,	20	13.39 " " "
November,	8	13.84 " " "
December,	52	13.09 " " "
December,	14	4.92 " fat.

Dr. Harrington, the milk inspector of Boston for the year ending Jan. 31, 1895, reports 14,203 samples of milk collected for examination. Out of this number, 142 complaints were entered in court and 138 convictions obtained. Of Dr. Harrington's cases in court, 48 were for milk of below 11 per cent total solids; 87 for milk below 12 per cent, but not below 11; 7 cases were for milk ranging from 12 to 12.6 per cent.

Of late there has been an annual agitation before the Legislature for a reduction of the statute standard. On this subject we renew our recommendations of previous years in

opposition to any such reduction, which we believe would be an injury to the consuming public and also to the better class of producers. An abundance of evidence can be brought forward to prove that average milk from average cows has 13 per cent total solids, so that the statute standard is placed at the average quality of milk, the milk of the distinctive butter breeds of cows ranging over 14 and often as high as 15 per cent. Should any change be deemed advisable, we feel that the one which would be of the most value would be to add a fat standard of 3.75. The study of the composition of milk has been carried to such an extent by experiment stations and others all over the country that it is well known that the amount of solids not fat in milk is quite uniform, the element which shows the most variation being the fat. There is also, within limits, quite a constant ratio between the solids not fat, and fat. In a sample of milk containing 3 per cent of fat we should look for somewhere in the neighborhood of 11 per cent of total solids. With 3.5 per cent of fat we should expect the total solids to be approximately 12 to 12.5 per cent. If milk has 3.75 to 4 per cent of fat, it will be up to the standard or above. The Babcock milk tester gives such an easy way of testing for fat that a statute recognition of the fact that normal 13 per cent milk has 3.75 per cent of fat would allow every farmer to test his own milk and keep track of the quality he is sending to the city, with an assurance that the milk is up to the standard.

Another reason for asking for this change is given in the following quotation from the report of Dr. Harrington, the Boston milk inspector, which meets the views of this department : ---

Another fraud which the present law does not reach, but which nevertheless is a serious fraud, has been discovered during the past year. The milk sold by certain dealers has shown a peculiar composition, inconsistent with that of genuine milk, and yet conforming to the statute requirement. While containing the necessary 13 per cent of milk solids, a decidedly low percentage of fat, with an abnormally high percentage of solids not fat, were noticed. On investigation, it was learned that a large business was being conducted with a New York house which sells condensed skim-milk obtained from the New York creameries. This skim-milk, which is in

a sense a waste product, is concentrated or "condensed" by evaporation in vacuum pans, and then sold to milkmen, who, after robbing their milk of a part of its cream, add enough of the concentrated skin-milk, containing almost wholly non-fatty substances, to bring the yield of total solids above the statute requirement. Thus a milk which has lost a valuable constituent is made to conform with the law. No provision in the existing law can reach this fraud, for two reasons: first, the removal of the cream, or a part thereof, can hardly be legally proven unless the operation has been actually observed; and, second, the substance added is in no sense foreign to milk. There is, however, a way to meet and prevent the deception, and that is, to establish a standard for fat; and the bill already referred to fixes this at 3.70 per cent. If this shall pass, there will no longer be any reason for adding non-fatty solids.

Another change in the law, which might be of advantage both to consumers and producers, would be in relieving the Board of Health from the arbitrary requirement that they expend a certain amount for the investigation of dairy products. The creation of the Dairy Bureau and the increased popular attention given to health matters lead to this suggestion. Our present laws relate almost wholly to commercial frauds, and have but little if anything to do with health matters. Under the present statute the Board of Health is compelled to divert a certain amount of its appropriation from health work to work in detecting commercial frauds. This work could be as well done by the Dairy Bureau, and the transfer would leave the Board of Health with greater resources to investigate some of the great health problems in connection with the milk supply which are now pressing upon the public attention.

The law requiring us to work in harmony with milk inspectors has produced good results, and we are indebted to Dr. Harrington and the milk inspectors of a number of cities other than Boston for much valuable information given to us. We wish that this department of the work of the Bureau could be extended and broadened, so that, without encroaching in the least upon the prerogatives of the local officers in the different cities, this office could be a clearing house for an interchange of information, and for giving to the Legis-

lature in its annual reports the best suggestions which these various local officers annually make to their respective city governments.

In the year 1894 the annual agitation for a reduction in the milk standard resulted in a compromise measure, which appeared on the surface to be a harmless though useless piece of legislation, enacting into a statute certain requirements as to the taking of samples which had already been in force through the operation of the well-established laws of evidence. This statute was opposed by the Bureau on the ground, first, that it was unnecessary, and second, that it might contain some loopholes through which dishonest milkmen would gain a point. The law was so objectionable that the governor refused to sign it, though he allowed it to become operative by the lapse of time without a veto. The law alluded to is chapter 425 of the Acts of 1894, and is as follows:—

No producer of milk shall be liable to prosecution on the ground that the milk produced by him is not of good standard quality, unless the milk alleged not to be of such quality was taken upon the premises or while in the possession or under the control of the producer by an inspector of milk or by the agents of the Dairy Bureau or State Board of Health, or collector of samples duly authorized by such inspector, and a sealed sample of the same given to the producer.

In the trial of a case where the defendant was charged with having in his possession milk below the standard quality, the evidence tended to prove that the defendant was the producer of the milk in question, and, at the time the sample was taken from his servant, was at his farm in another city. The court was asked to rule that there was a variance between the complaint and the proof, and that the evidence would not warrant a verdict of guilty. The court declined so to rule; the defendant was convicted; exceptions were taken and overruled by the supreme court. In its opinion the supreme court said:—

It is the general rule of law that the possession of a servant is the possession of the master. In the present case, we think that

the evidence showed that the milk was still in the possession and under the control of the defendant. Statutes of 1894, chapter 425, was designed to exempt a producer of milk from prosecution on a complaint that the milk was not of good standard quality only when the milk was found on other premises than those of the producer; or in the possession of another person than the producer, who was not subject to the control of the producer, and who, therefore, might have adulterated the milk for his own purposes; or when milk, if found upon the premises or in the possession or under the control of the producer, was taken by some person who was not an inspector of milk or an agent of the Dairy Bureau or State Board of Health, or a collector of samples duly authorized by an inspector, and who, therefore, might not be trustworthy. In every case of a taking of milk a sealed sample of the milk taken must be given to the producer for his protection. There is no indication that the general law governing the responsibility of a master for the acts of his servant was intended to be affected by the statute.

INSTITUTE WORK.

Nineteen farmers' meetings have been addressed by the acting executive officer of the Bureau during the past year. In most of these the Babcock tester was used in testing samples of milk brought to the meeting, its use explained, with its value to dairymen, whether producing milk for the market or making butter. One hundred and nineteen samples of milk were tested in such demonstration talks. The following are the statistics of the samples tested:—

3.4 per cent of fat and below,	13 per cent of samples.
3.6 to 3.8 per cent of fat (on the line of the legal standard),	25 per cent of samples.
4 to 5 per cent of fat,	42 per cent of samples.
Above 5 per cent of fat,	20 per cent of samples.
	<hr/> 100

THE BAY STATE FAIR.

The annual agricultural fair at Worcester this year was a State fair. Being such, the Dairy Bureau was invited to take charge of the dairy department, and the acting executive officer was appointed superintendent. The exhibits of butter,

cheese and the dairy machinery were grouped in one room, so that persons interested in dairying could find in one place all that the exhibition had to offer in that line. The specimens of butter were scored by Mr. George D. Fales of Boston. After the scoring, samples were taken for chemical analysis. We submit below the result of the scoring, and the analyses of samples which took premiums:—

CREAMERY PRINTS.

EXHIBITORS.	Score.	ANALYSIS.			
		Water.	Fat.	Salt.	Curd.
		Per Cent.	Per Cent.	Per Cent.	Per Cent.
Worcester County Creamery, .	97 $\frac{1}{2}$	10.98	85.28	2.54	1.20
Montague Creamery, . . .	97	10.52	86.42	2.20	.86
E. S. Cove, Phillipston, . .	94 $\frac{3}{4}$	—	—	—	—

DAIRY PRINTS.

F. W. Field & Son, Somers, Conn.,	97 $\frac{1}{2}$	9.17	88.49	1.57	.77
W. F. Wilder, Rindge, N. H., .	97 $\frac{1}{4}$	7.98	87.82	2.40	1.90
N. I. Bowditch, Framingham, .	96 $\frac{1}{4}$	9.71	87.57	2.25	.57

CREAMERY TUBS.

Rockside Creamery, Altoona, N. Y.,	96	8.73	88.80	2.12	.35
Worcester County Creamery, .	95 $\frac{1}{2}$	12.86	84.03	2.62	1.49
Montague Creamery,	95 $\frac{1}{4}$	10.08	87.39	1.95	.58

DAIRY TUBS.

J. A. Cunningham, Bolton, .	96 $\frac{1}{2}$	9.10	88.55	1.31	1.04
-----------------------------	------------------	------	-------	------	------

DAIRY BOXES.

J. A. Cunningham, Bolton, .	96 $\frac{1}{2}$	—	—	—	—
Mrs. Mary L Sawyer, Sterling,	92 $\frac{1}{2}$	—	—	—	—
N. I. Bowditch, Framingham, .	92	—	—	—	—
E. J. Dana, North Pomfret, Vt.,	92	—	—	—	—

In the dairy building, but having no connection with the department under the superintendency of the Bureau, took place the churning of the cream from the cows contesting for the butter premiums. The cows were milked on the grounds, the milk placed in charge of a butter maker, who superintended its ripening, and the second day it was churned, each competitor being allowed to churn his own cream, if he desired. Samples of buttermilk were taken by the representative of the Bureau and tested in the Babcock tester. Startling amounts of fat were found in the buttermilk, showing that the prize was awarded for the most skilful manipulation of the cream, rather than for the cow producing the most butter. The results were so important and startling that they have attracted the attention of the dairy press over the whole country. The statistics are given in the following table: —

OWNER.	Cow's Name.	Weight of Milk.	Weight of Butter.	Fat in Buttermilk.	ANALYSIS OF BUTTER.		
					Fat.	Curd.	Water.
					Per Cent.	Per Cent.	Per Cent.
C. H. Ellsworth, .	herd,	lbs. 168 6	oz. 9 8½	Per Cent. .80	78.27	1.00	21.73
L. J. Kendall, .	herd,	114 7	5 9	1.20	81.11	2.04	18.89
J. B. Palmer, .	herd,	60 8½	2 8	1.20	82.18	.80	17.82
J. W. Andrews, .	Lady Kate,	38 1½	1 12	.50	81.61	.53	17.86
H. McKay Twombly, .	Cocoa,	- -	1 10	1.40	72.21	.28	27.51
C. H. Ellsworth, .	Brownie,	33 1½	1 9½	.80	82.10	.98	16.92
J. W. Andrews, .	Lady Amy,	25 3	1 8	.20	84.34	.66	15.00
H. McKay Twombly, .	Rutilla's daughter, .	26 5	1 8	.60	80.78	.82	18.60
N. I. Bowditch, .	103,	31 15½	1 7	3.40	82.10	.60	17.30
N. I. Bowditch, .	195,	32 2	1 6	3.40	81.35	.62	18.03
J. A. Cunningham, .	Fenella,	24 9½	1 6	.20	86.46	1.17	12.37
J. A. Cunningham, .	Edith,	30 6	1 3½	1.00	85.61	.31	14.62
L. J. Kendall, .	Lilly,	25 11	11	3.40	83.91	.52	15.57
L. J. Kendall, .	Pearl,	25 3½	5	5.00	83.25	.49	16.26

On the whole, the dairy department of the fair was considered very successful.

PROPER TESTING OF COWS AT FAIRS.

In connection with the proper method of testing cows at fairs, the Bureau has used its influence to bring about a reform, and to impress the dairy community with the fact that a cow is to be valued for the amount of milk solids she produces, rather than for the amount of water which may be drawn from her udder. Growing out of our suggestion, the Worcester South Agricultural Society offered premiums for the cow producing the greatest amount of butter fat on the grounds of the society during twenty-four hours. This is virtually equivalent to a prize for the cow producing the greatest amount of total solids, for, the fat being the varying element, the cow that produces the greatest amount of fat will necessarily produce the greatest amount of total solids. The awarding of this premium was left with the representative of the Bureau, with the following results:—

OWNER.		Weight of Milk.	Per Cent of Fat.	Ounces of Fat produced.	Mathematical Equivalent of Fat in Butter.
		lbs. oz.			lb. oz.
L. Crawford, New Brain-tree, seven-year-old thoroughbred Jersey, giving milk three weeks.	evening, morning,	10 14	6.0	10.4	—
		10 12	5.8	10.0	—
		21 10		20.4	1 8
L. W. Woodis, Brookfield, grade Ayrshire, calved August 1.	evening, morning,	16 8	3.6	9.5	—
		16 9	3.8	10.0	—
		33 1		19.5	1 7
C. D. Richardson, West Brookfield, thoroughbred Jersey.	evening, morning,	10	5.0	8.0	—
		8 14	5.0	7.0	—
		18 14		15.0	1 1½
L. Crawford, New Brain-tree, eight-year-old grade Guernsey, in milk since May 1.	evening, morning,	9 14	4.6	5.9	—
		9 15	4.8	7.6	—
		19 13		13.5	1
Geo. W. Sherman, Brookfield.	evening, morning,	1 13	4.0	1.2	—
		2 8	5.4	2.2	—
				3.4	4

HOME DAIRY TESTS.

The Bay State Society, working along this same line, but carrying the idea a step farther, has offered prizes for cows producing the greatest amount of butter fat, the tests to be made at the homes of the competitors, with cows surrounded by normal conditions, rather than with the excitement and confusion of exhibition grounds. The results of this work are as follows:—

Herd of Herbert Merriam of Weston.

COWS.		Weight of Milk.		Per Cent of Fat.	Weight of Fat.	Total (Pounds).
		lbs.	oz.		lbs.	
Yellow Lily, . . .	Thursday, P.M., . . .	12	6	5.0	.618	—
	Friday, A.M., . . .	12	4	5.6	.686	—
	Friday, P.M., . . .	12	2	4.6	.558	—
	Saturday, A.M., . . .	11		5.4	.594	—
				—5.15		2.456
Polly of Lincoln, . .	Thursday, P.M., . . .	17	6	3.8	.660	—
	Friday, A.M., . . .	13	12	4.2	.577	—
	Friday, P.M., . . .	15	11	4.0	.627	—
	Saturday, A.M., . . .	14		4.4	.561	—
				—4.10		2.425
Polly of Nobility, . .	Thursday, P.M., . . .	13	6	4.6	.615	—
	Friday, A.M., . . .	10	1	5.2	.523	—
	Friday, P.M., . . .	12	14	4.6	.592	—
	Saturday, A.M., . . .	11	1	5.8	.642	—
				—5.05		2.373
Polly of Lincoln, 3d, .	Thursday, P.M., . . .	11	12	5.0	.587	—
	Friday, A.M., . . .	11	7	6.0	.686	—
	Friday, P.M., . . .	11	8	4.6	.529	—
	Saturday, A.M., . . .	10	1	4.6	.463	—
				—5.05		2.265
Polly of Concord, . .	Thursday, P.M., . . .	9	11	4.8	.465	—
	Friday, A.M., . . .	8	14	4.8	.426	—
	Friday, P.M., . . .	10	2	4.8	.486	—
	Saturday, A.M., . . .	9	8	5.6	.532	—
				—5.00		1.909
Total for herd,						11.428

Herd of N. B. Douglas of Sherborn.

Daisy,	Thursday, P.M., . . .	14	10	4.4	.644	—
	Friday, A.M., . . .	12	11	4.2	.533	—
	Friday, P.M., . . .	14	1	4.2	.591	—
	Saturday, A.M., . . .	12	14	4.4	.567	—
				—4.30		2.335

Herd of N. B. Douglas of Sherborn — Concluded.

COWS.				Weight of Milk.	Per Cent of Fat.	Weight of Fat.	Total (Pounds).
				lbs. oz.		lbs.	
Hilda,	.	.	Thursday, P.M.,	12 14	4.4	.567	-
			Friday, A.M.,	12 5	4.4	.542	-
			Friday, P.M.,	13 2	4.4	.578	-
			Saturday, A.M.,	11 12	4.6	.541	-
					4.45		2.228
Biscuit,	.	.	Thursday, P.M.,	10	5.0	.500	-
			Friday, A.M.,	9 6	6.4	.600	-
			Friday, P.M.,	10	5.4	.540	-
			Saturday, A.M.,	8 10	4.2	.362	-
					5.25		2.002
Gretchen,	.	.	Thursday, P.M.,	11 12	4.6	.541	-
			Friday, A.M.,	10 1	5.0	.503	-
			Friday, P.M.,	11 2	4.4	.489	-
			Saturday, A.M.,	10	4.0	.400	-
					4.50		1.933
Pansy,	.	.	Thursday, P.M.,	8 8	5.2	.442	-
			Friday, A.M.,	10	5.4	.540	-
			Friday, P.M.,	8 8	5.4	.459	-
			Saturday, A.M.,	7 12	4.4	.341	-
					5.10		1.782
Total for herd,				.	.	.	10.280

BOSTON MILK SUPPLY.

The following is the number of cans of milk received and sold by the milk contractors of Boston, who supply at least three-fourths of the milk sold in the "greater Boston." The cans contain $8\frac{1}{2}$ quarts each.

	Received.	Sold.	Surplus.
January,	801,457	621,049	180,408
February,	730,937	563,039	167,898
March,	860,757	631,527	229,230
April,	861,524	656,943	204,581
May,	934,871	710,823	224,048
June,	918,079	704,364	213,715
July,	801,285	721,618	79,667
August,	771,628	701,149	70,479
September,	758,131	699,140	58,991
October,	820,454	679,128	141,326
November,	782,071	687,530	94,541
December,	815,306	664,422	150,884
Total,	9,856,500	8,040,732	1,815,768
1894,	9,705,447	7,657,421	2,048,026
1893,	9,263,487	7,619,722	1,643,765
1892,	9,212,667	7,315,135	-

CONTINUOUS MILK TESTS.

Last year we reported investigations made by Mr. Clemence of the Bureau on the quality of the milk furnished by his herd. These investigations have been continued during the year, and we regard the result as very valuable. Mr. Clemence is a milk dealer retailing his own production, and has a herd of grade cows purchased from different sources as necessary to keep up his supply. While he is desirous of having cows which give as much milk as possible, he is also desirous that the milk shall be of reasonable quality. Nearly two years of monthly tests of mixed milk of his herd show that it is very uniform, varying less than three-tenths of one per cent, regardless of the season of the year or the kind of feed. This proves that, under such conditions as exist in Mr. Clemence's case, common cows will give milk up to the statute standard, and that there are no mysterious variations from a comparatively uniform quality. The percentage of fat has ranged between 4.2 and 4.4 per cent by the Babcock test. Several samples of milk, submitted to chemical analysis for the purpose of verifying the Babcock test, and showing indisputably what such milk ought to contain of total solids, have resulted in a range of from 13.52 to 13.84 per cent of solids. This verifies what the Bureau has frequently stated, that milk of 3.75 per cent of fat is, if normal, up to the standard, and it shows that there is no difficulty in producing standard milk.

MISCELLANEOUS.

The Bureau has been represented at two dairy conferences of a national nature, and in one case its acting executive officer was invited to prepare a paper. He has also done some work for the milk interests of the State, as secretary of the Milk Producers' Union.

FINANCIAL STATEMENT.

The following is the financial statement of the expenses of the Bureau during the past year : —

Appropriation by Legislature of 1895,	\$7,000 00
Members of the Bureau, travelling expenses and attending meetings,	\$326 80
George M. Whitaker, travelling and other expenses,	624 23
Agents' salaries,	1,807 66
Agents' expenses,	1,434 57
Chemical work,	1,670 00
Educational work,	150 66
Legal advice,	105 00
Printing,	79 30
Supplies,	85 23
<hr/>	
Total,	\$6,283 45
Unexpended balance,	716 55
<hr/>	
	\$7,000 00

Respectfully submitted,

GEO. M. WHITAKER,

Acting Executive Officer.

Approved and adopted as the report of the Dairy Bureau.

C. L. HARTSHORN.

GEO. L. CLEMENCE.

DWIGHT A. HORTON.

Boston, Jan. 15, 1896.

HOUSE

. . . . No. 225.

SIXTH ANNUAL REPORT

OF THE

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED

UNDER CHAPTER 412, ACTS OF 1891.

JANUARY 15, 1897.

BOSTON :

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,

18 POST OFFICE SQUARE.

1897.

HOUSE No. 225.

SIXTH ANNUAL REPORT

OF THE

Mass. DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED

UNDER CHAPTER 412, ACTS OF 1891.

JANUARY 15, 1897.

STATE LIBRARY OF MASSACHUSETTS

MAR 15 1940

STATE HOUSE, BOSTON

Gift of U. S. Library

YOUNG MAN

TO

RECEIVED

614.32M3

.II 13 r

1896

B

DAIRY BUREAU — 1896-97.

D. A. HORTON, NORTHAMPTON, *Chairman.*

GEO. L. CLEMENCE, SOUTHBRIDGE.

J. L. ELLSWORTH, WORCESTER.

Executive Officer.

W. R. SESSIONS, *Secretary of the State Board of Agriculture.*

Assistant to the Secretary and Acting Executive Officer, appointed by the Governor.

GEO. M. WHITAKER, BOSTON.

REPORT OF THE DAIRY BUREAU.

To the Senate and House of Representatives of the Commonwealth of Massachusetts.

A change in the membership of the Bureau occurred early in the season by the retirement of Mr. C. A. Hartshorn, whose term as member of the Board of Agriculture expired in February. Mr. J. L. Ellsworth of Worcester, who succeeded Mr. Hartshorn as delegate to the Board from the Worcester Society, was appointed by the governor as a member of the Bureau. Mr. D. A. Horton was elected chairman of the Bureau, to succeed Mr. Hartshorn.

During the year the Bureau has had in its employ four agents. The duties of these agents are to ascertain how the dairy laws are obeyed, to obtain samples in case of suspected violations of law and to procure evidence for use in court when needed. The agents employed by the Bureau, and their terms of service, have been as follows:—

GEORGE F. BALDWIN,	12 months.
CHARLES C. SCOTT,	9 months.
FRED M. COFFIN,	4½ months.
J. W. STOCKWELL,	4½ months.

In addition, the Board has appointed as agents Dr. Charles Harrington, the Boston milk inspector, and his staff, to serve without compensation. This was done to quiet any legal quibbles as to the authority of the city inspector in certain contingencies, and to promote harmony and efficiency of action.

The active executive work of the Bureau has continued under the immediate charge and direction of George M. Whitaker, whose duties correspond somewhat to those of a

State Dairy Commissioner, but whose statutory title is vaguely defined as “ Assistant to the secretary of the Board of Agriculture . . . to assist in the work prescribed in the eleventh section of this act.”

The chemical work has been done by Dr. B. F. Davenport and the Hatch Experiment Station.

OLEOMARGARINE.

The work of the Bureau in enforcing laws relative to imitation butter has been statistically as follows : —

Number of inspections,	1,949
Samples taken,	495
Cases in court,	76

The result of the court cases was as follows : —

Convictions,	50
Acquittals,	19
Nolle pros.,	6
Nolo contendere,	1
Total,	<hr/> 76

The complaints were made for the following causes : —

Serving oleomargarine in hotels and restaurants without giving notice,	30
Possession of imitation of yellow butter with intent to sell,	24
Sale of oleomargarine when butter was called for,	11
Lack of sign on wagon,	3
Interference with agents of the Bureau,	3
Selling imitation of yellow butter,	2
Failure to mark wrapper properly,	1
Failure to have local license,	1
Lack of proper sign in store,	1
Total,	<hr/> 76

These figures represent more convictions than last year, with fewer cases in court. If a person is disposed to violate the dairy laws, he usually breaks more than one, and we frequently find that in one transaction several statutes have been violated. For instance, one who sells oleomargarine when butter is called for will doubtless fail to have proper wrappers

and signs. Hence, the 76 cases noticed above probably represent more than twice that number of transgressions. But courts do not like to entertain more than one complaint based on a single transaction, and on account of past experiences we have been more conservative this year about basing several complaints on one sale or the taking of one sample, with the result that we have had, as stated above, fewer cases in court, but more convictions than last year. Of the cases appealed, all but one were settled before coming to trial by a plea of guilty; that one was lost on a technical ruling as to the meaning of the statute. This was a case for delivering oleomargarine from a wagon on which there was no sign.

Our work has been done outside of Boston, in which city Dr. Harrington continues his efficient work as the local milk inspector. His last published report shows 582 samples taken in Boston, and 106 cases in court, of which 71 were for serving oleomargarine in restaurants without notifying guests.

Statistics of court cases, however, do not adequately represent the result of work in enforcing laws. Police regulations are more for preventing crime than for its detection. And the nearly 2,000 inspections made by the agents of the Bureau in the principal towns and cities of the Commonwealth (outside of Boston) have had a healthy deterrent effect. As a result of this work, and the efforts of Dr. Harrington in the city of Boston, the sales of oleomargarine have materially decreased. The number of revenue taxes paid in Massachusetts has declined from 211 in 1891 to 28 in 1896. The receipts of oleomargarine reported at the Boston Chamber of Commerce were 13,552 packages in 1896, against 28,946 in 1895. Only 19 persons or corporations pay a revenue tax in this State at the present time. But 1 corporation pays a tax to do business (*i. e.*, to violate Massachusetts law) at 10 different locations, making the 28 noticed above. The action of this corporation speaks louder than words in proving the falsity of its own claim that oleomargarine "is an article of great food value," "sold only on its distinctive merits." This concern not only uses on its stationery the word "butterine" instead of "oleomargarine" for obvious reasons, but it prefers to sell an article colored in imitation of yellow butter,

rather than one which has a color of its own. For some reason it also prefers to use, as a part of its corporate title, the name of one of the distinctive dairy States of the union, though its place of business is Rhode Island.

In fact, all of the oleomargarine distributed in Massachusetts comes from Rhode Island, which is behind the other States of New England in pure food legislation. This oleomargarine is mostly sold by peddlers, and in a more or less deceptive way. We have found it under the seats of carryalls, in wagons with showy “washing-compound” signs, and in unsuspecting handle baskets. In fact, the tactics of these dealers are much like the methods of those who sell intoxicating liquors illegally. Evidence of sales under such circumstances is hard and often expensive to secure. The court cases which we have had lead us to the opinion that when the dealer knows—or thinks he knows—his customer, much of this oleomargarine is actually sold for butter.

Considerable oleomargarine is sold on “orders,” the legal “sale” taking place in Rhode Island. We give below a copy of a letter sent by a Rhode Island concern to many of the grocers in Massachusetts. The letterhead announces that the concern deals in “fine creamery butterine.”

We desire to inform you of the fact that all grocers in New England are now in a position to sell their customers butterine without a license, and that the demand for a fine quality of cream butterine is steadily increasing, and we take special pains to inform you how to sell this product and protect your trade against competitors who are now selling them, which will give your firm the profit we are certain you are entitled to. This effort we know will be appreciated by you, and we sincerely hope will develop a business that will pay us mutually to our satisfaction.

We enclose you herewith a supply of order blanks, which we request you to give to your solicitors or drivers of your delivery wagons, who will inform your customers of the opportunity to supply them with the finest cream butterine, and the solicitors may fill out the orders, when a sale is made, giving the customer's name, price he sells goods for per pound, and address of customer, trying, if possible, to accumulate orders for fifty pounds or more before forwarding to us, which we can send by freight or express at a much lower rate than in smaller lots.

We have given your firm the number which is on the "order blanks," and it is not necessary to write your name on orders.

The butterine is shipped to your customers in your care, and will be sent direct to you, and each package will be tagged to the customer it has been sold to; also we will forward you the bills for collection, and charge these parties under your number, and will expect you to remit for these goods as soon as bills are collected.

We will wrap each package with paper, so that you can deliver the same to customers without others being aware of its contents.

Our cream butterine is put up in 10, 20, 30, 50 and 60 pounds solid-packed tubs, and 10 pound cases of 1 pound brick prints, also 37 pound tubs of 1 pound bricks, which is "butter color," and we quote you the very low price of 12 cents per pound, F. O. B., Providence.

We will ship either by freight or express, as you request; and, as the profit on these goods is more than is made on butter, we know you will push it hard, and hope your commissions which we forward you each month will be quite large. Some of our "order agents" are making from \$75 to \$100 per month, and we do not doubt but that you will take care to see yours at that point; also we will say that if you desire to put a man on this work specially in your city we think he will make you money, as he should get from 15 to 23 cents per pound, which is a good profit over 12 cents F. O. B., Providence. We now await results.

In some instances the Commonwealth of Massachusetts is itself an evader of the law, if not an open violator of it. In the discussion in the Legislature last winter the friends of oleomargarine admitted that the Commonwealth itself is the greatest violator of the law, inasmuch as its agents annually buy large quantities of the article for use in State institutions. It was claimed that bills on file at the office of the State Auditor show that large quantities are used at the various State farms, almshouses, hospitals and other institutions. Some of the private charitable institutions also use this deceptive imitation, and in some instances even the veterans of the late war, who fought valiantly to preserve the Union, and who find themselves in straightened circumstances in old age, are given this same product.

It may not be out of place briefly to re-state the arguments and facts on which these laws are based. The oleomargarine manufacturers and dealers keep up a constant agitation,

through the press and in other ways, which is of an absolutely misleading and dishonest nature. They continually call attention to the food value and healthfulness of oleomargarine, and quote what some "prominent medical man" says of its value. All this talk is deceptive. No one claims at this day that oleomargarine is unhealthful, though it is less digestible than butter. Its melting point is higher than the melting point of butter, and when taken into the stomach a higher degree of animal heat must be secured before the oleomargarine can be melted than is necessary to digest butter. This is an important fact in the case of persons of weak digestion. It is also a fact that, by reason of lacking the volatile oils which give butter its delicate taste, oleomargarine is less digestible than butter. The delicate and palatable flavors in food have a purpose in promoting the secretion of the salivary juices, and, so far as oleomargarine is lacking in these flavors, it is relatively less digestible than butter.

But the agitation for restrictive laws and their justification rests on other grounds. No one denies that suet and lard are harmless food fats and that under ordinary circumstances, if people desire to use them, they should be given an opportunity to do so. But when these fats are mixed and colored to imitate yellow butter, whatever may be the scientific food value of the product, as an article of commerce it is not sold on its merits but on account of the skill of the imitation. There is no demand for oleomargarine of a white color. The whole history of the trade is a history fraught with misrepresentation. Oleomargarine never has been put on the market and advertised on its merits for its distinctive food value. It has always been pushed on account of its similarity to butter. It is packed in butter tubs, it is colored with butter color, and of late years the trade has adopted the name "butterine," in preference to the older and more correct form, "oleomargarine." These facts are so self-evident, and the deceit is so palpable that it is recognized even by the paragraphers who manufacture the jokes for the humorous papers; and one of them represents a person asking his grocer how "b-u-t-t-e-r-i-n-e" is pronounced, and the answer is, "With the last syllable silent."

These laws are sometimes the subject of sneers, as "being

in the interests of the farmers," as if the agricultural element of the country was something hardly equal in importance with the rest of humanity. This is wrong, as we think that these laws are equally in the interests of consumers, honest merchants and the farmers. But, even placed on the latter basis, the magnitude of the dairy interests of the country is not generally appreciated, and is worthy of consideration. The chief of the National Dairy Bureau, Maj. H. E. Alvord, estimates that the annual value of the dairy product of the nation is \$450,000,000. We have heard a great deal during the last few months about the relative value of gold and silver, but there has never been a year when the entire gold and silver product of the country was enough to buy the dairy products of this country the present year. These products at market rates would pay off all the State and county debts in the nation, and leave a handsome balance. As a matter of broad statesmanship and sound political economy, is it not wise to regulate the sale of imitations of these articles, and is it not equally proper that the degree of regulation should be proportioned to the degree of deceitfulness used in promoting their traffic?

FILLED CHEESE.

This is another imitation which has been of serious damage to the dairy interests of the country. The export demand for cheese from the United States has dwindled to almost nothing, while Canadian cheese has found an increasing sale every year in the foreign markets, where the words "American cheese" had come to be almost synonymous with deceit and cheating.

The evil became so great that during the year Congress has taken the matter in hand, and passed laws regulating the sale of lard cheese. Hence the business is much curtailed. Previous to this national legislation Massachusetts had laws on the subject which have proved satisfactory, as there has not been so much temptation to sell adulterated cheese as to sell imitation butter. Although the Bureau has made much effort to ascertain if any filled cheese was sold in Massachusetts, we have been unable to find any, and believe that the State is practically free from it.

MILK.

The Bureau has done more work in enforcing the milk laws during the past year than ever before, chiefly in response to requests from different localities, and in instances where the work could be done by an agent in connection with the work on oleomargarine cases, without additional expense.

We have had three cases in court for selling milk below the legal standard, and in all convictions were secured. The probabilities are that in each case the milk was actually adulterated. The analyses were in —

	Per Cent.	Per Cent.	Per Cent.
Case No. 1,	fat, 2.82; solids not fat, 8.80; total, 11.62		
Case No. 2,	" 2.20; " " " 7.20; " 9.40		
Case No. 3,	{ " 2.22; " " " 8.38; " 10.60		
	{ " 1.66; " " " 8.66; " 10.32		

We have taken during the year 139 samples of milk, of which the above 3 were all that were so far below the standard as to warrant bringing the case into court.

An interesting study in the milk question is furnished by the analyses of samples from different localities. In October an inspector was sent by request to Methuen, and samples were taken from 9 milkmen, analyzing as follows: —

	Per Cent.		Per Cent.
No. 1,	13.24	No. 7,	14.98
No. 2,	14.46	No. 8,	12.40
No. 3,	12.74	No. 9,	14.28
No. 4,	13.10	No. 10,	12.44
No. 5,	12.84	No. 11,	14.36
No. 6,	13.92		

At another time samples were taken from 6 milkmen in Greenfield, with the following results: —

	Per Cent.		Per Cent.
No. 1,	{ 12.00	No. 4,	{ 14.40
	{ 14.20		{ 12.56
No. 2,	13.64	No. 5,	{ 13.20
	{ 12.38		{ 12.36
No. 3,	{ 13.86	No. 6,	13.24

It will be noticed that in this town the practice of mixing milk does not probably exist to the extent that it should, as different milkmen were found with milk averaging all right, but of wide variation in quality.

Compare the above with the analyses of samples taken in Chelsea, as follows:—

	Per Cent.		Per Cent.
No. 1,	12.50	No. 5,	12.12
No. 2,	13.06	No. 6,	12.50
No. 3,	12.42	No. 7,	12.46
No. 4,	12.46		

The above samples from Chelsea were taken on the request of local parties, who suspected some milkmen of adulterating whole milk with skim-milk. The result of the analyses would indicate that something of this kind had been done, and yet the milk was not poor enough to run the risk of defeat in court.

It should be remembered that no complaint is made against a person for selling milk below the standard unless the milk varies enough from the statutory standard to make conviction seem reasonably sure. Many people who argue against the milk standard think that the statute draws an arbitrary line, and that anything which falls below that line, be the difference ever so small, may be the basis of a legal prosecution and cause the seller or producer to be branded as a criminal. Nothing of this kind exists, in actual practice. The milk must be enough below the standard to satisfy the court, beyond any reasonable doubt, that it is not of average quality, in spite of the efforts of shrewd lawyers on the defence to cast suspicion on methods of sampling or accuracy of the analysis.

This allowing a certain latitude is not favoritism, or laxity in enforcing the laws,—but it is due to well-established principles of court procedure which have the sanction of the highest legal lights in the Commonwealth, and which would soon cause trouble if they were violated.

The Legislature of last winter improved the milk laws by specifying the amount of fat and of solids not fat which standard milk should contain. This put a stop to the excessive use of skim-milk as an adulterant.

The law was also amended, reducing the standard during

three additional months in the year. This we fear was a mistake, and we hope no further reductions will be made. We think that the interests of both consumer and producer are promoted by the 13 per cent standard.

CONDENSED MILK AND CREAM.

The sale of condensed milk is increasing, as it is sold in convenient form for many to use. The use of cream is also increasing rapidly. Not only is it delivered by milkmen, but it is becoming a staple article of merchandise in many stores. This condensed milk and cream can be brought from greater distances than the ordinary sale milk, and is proving in some cases a formidable competitor to the milk business. The quality of condensed milk and cream varies to a remarkable degree, and a statute standard may soon be necessary, for the protection of both consumer and producer. A brand of "evaporated cream" was found by an agent of the Bureau with only 3.75 per cent of fat. Condensed skim-milk would be a more honest name.

OTHER QUESTIONABLE PRACTICES.

Several new forms of milk preservatives have been advertised quite extensively during the past year, and great efforts made to induce milk dealers and farmers to buy them. One claim made for one of these preservatives was that after having been added to the milk it would evaporate so that no chemist could detect it, and still retain enough of its qualities to preserve the milk. Several samples of milk treated with this preservative were sent to our chemist without any notification of the fact of a preservative having been used, but in every instance he discovered it, and so reported.

Several new processes of renovating old butter have been perfected during the past few years, and we find upon the market considerable of what is known as "process butter." Samples of this have been taken for analysis a number of times, and in every instance we have found that it was unquestionably the product of the cow's udder; but such butter should be sold for what it is, and not palmed off upon customers as fresh creamery. The same remark would apply to many of the ladle packed goods.

BOSTON MILK.

The executive officer of the Bureau has given some time and attention during the year to the interests of the Milk Producers' Union, believing that such a course was in accordance with the statute which says that the Dairy Bureau is established "to promote the improvement of the products of the dairy," "to investigate all dairy products and imitation dairy products bought or sold within the Commonwealth," and "to disseminate such information as shall be of service in producing a more uniform dairy product, of higher grade and better quality." The milk receipts in the city of Boston have been phenomenally large during the past year, having increased about one million of the eight and one-half quart cans over the previous year, while the sales have not shown any great increase. The result has been an unusually large surplus, which has made the production of milk less satisfactory than in previous years. The statistics of the Boston milk business are as follows (the figures refer to eight and one-half quart cans) :—

	Receipts.	Sales.	Surplus.
1895,	9,856,500	8,040,732	1,815,768
1894,	9,705,447	7,657,421	2,048,026
1893,	9,263,487	7,619,722	1,643,765
1892,	9,212,667	7,315,135	—

MONTHS.	Receipts.	Sales.	Surplus.
1896.			
January,	844,709	651,827	192,882
February,	808,383	611,793	196,590
March,	871,572	657,038	214,534
April,	891,275	672,561	218,714
May,	1,005,115	696,599	308,516
June,	994,817	675,796	319,021
July,	899,397	712,188	187,209
August,	854,913	687,224	167,689
September,	866,691	635,092	231,599
October,	960,734	699,245	261,489
November,	885,903	690,920	194,983
December,	898,599	707,095	191,504
Totals,	10,772,108	8,087,378	2,684,730

DAIRY EXHIBITIONS.

The country meeting of the State Board of Agriculture gave more than ordinary prominence to dairy matters, and in connection with the exhibition there was a State butter show, under the management of the Bureau. The exhibition was of excellent quality, and brought many high compliments from the expert judges — Messrs. E. A. Hovey and Orrin Douglas of Boston. It showed conclusively that, though Massachusetts may not be a distinctively agricultural State, so far as quantity of farm products is concerned, she can hold her own with the best in quality. The highest score was on a par with the highest scores at the State dairy exhibitions in Vermont and New Hampshire, and was three points more than the highest score in Maine. In connection with the meeting an explanation of the enforcement of the law relative to the milk standard was given, and a number of samples of milk were tested.

The following is the official score of the butter at this exhibition : —

Private Dairies.

	Flavor.	Texture.	Color.	Salt.	Style.	Total.
L. F. & W. H. Gray, Ashfield, first premium,	43	25	14.75	10	5	97.75
H. C. Haskell, East Deerfield, second premium,	39	25	15	10	5	94
F. W. Trow, Buckland.*	39	25	15	10	5	94
J. M. Harris, East Northfield, third premium,	39	25	14.75	10	5	93.75
Henry Lively, Hawley,	40	25	14	10	4.5	93.50
C. A. Wiley, Buckland,	40	24.5	14	10	5	93.50
H. W. Blair, North Blandford,	38	25	15	10	5	93
J. G. Pickett, Greenfield,	38	25	14.75	10	5	92.75
Mrs. S. C. Severance, Leyden,	38	25	14	10	5	92
W. H. Laws, Fitchburg,	37	25	15	10	5	92
C. A. Wiley, Buckland,	37	25	14.50	10	5	91.50
D. H. Clark, Easthampton,	36	25	14.75	10	5	90.75
C. B. Lyman, Southampton,	36	25	14.50	10	5	90.50
Winslow S. Lincoln, Worces- ter,	37	23.5	14.75	10	5	90.25
J. B. & H. H. Warriner, Haw- ley,	35	25	14.50	10	4.75	89.25
J. L. Brewer, Pelham,	33	25	15	10	5	88
Mrs. C. W. Hillman, Colrain,	32	25	15	10	5	87
H. H. Leach,	35	22	14	10	5	86
Francis Howland, Conway,	30	25	15	10	5	85
C. A. Merriam, New Salem,	30	25	15	10	4	84

* This was received after the others had been scored and the premiums announced.

Creameries.

	Flavor.	Texture.	Color.	Salt.	Style.	Total.
1. Hillside, Windsor, Vt., .	42.50	25	15	10	5	97.50
2. Hinsdale, first premium,	42.50	25	14.75	10	5	97.25
3. Hillside prints, . . .	41	25	15	10	5	96
4. Shelburne Falls, second premium, . . .	40.50	25	15	10	5	95.50
5. New Salem, third premium, . . .	40.25	25	15	10	5	95.25
6. Chester,	40	25	15	10	5	95
7. Montague,	40.50	25	14.50	10	5	95
8. Conway,	40	24	15	10	5	94
9. Northfield,	39	25	15	10	5	94
10. Heath,	38	25	14.50	10	5	92.50
11. Amherst,	38	25	14.25	10	5	92.25
12. Coldspring,	37	25	15	10	5	92
13. Charlemont,	34	25	15	10	5	89
14. Ipswich,	32	25	14	10	4	85
15. Ashfield,*	—	—	—	—	—	—

* Received too late for scoring.

FAIR TESTS.

The executive officer of the Bureau has been called upon twice to take charge of the dairy premiums at agricultural fairs, where the prize was offered for the greatest amount of butter fat produced on the fair grounds during the exhibition. This form of test is very practical, and is growing in popularity. The value of a butter cow consists in what she will produce, and there is no better way of ascertaining this than by an actual test of the milk. This method of testing cows for the premiums of the agricultural societies is a marked step in advance of the old-time way. At one of the fairs, the Berkshire, the entries were not enough to call for any test being made. At the fair of the Worcester South Society tests were made of the product of the competing animals for one day, with the following result, the two rows of figures being the weight and test of the evening and morning milking:—

OWNER.	Weight of Milk.	Per Cent of Fat.	Weight of Fat.	Total (Pounds).
	Pounds.		Pounds.	
Luther Crawford, New Braintree, grade Guernsey. }	13.75 16.16	4.6 4.2	.63 .68	— — 1.31
	29.91			
C. Underwood, East Brookfield, Guern- sey Belle. }	14.62 10.40	5.4 4.6	.79 .48	— — 1.27
	25.02			
Luther Crawford, New Braintree, { thoroughbred Jersey. }	11.12 10.06	6.8 5.0	.76 .50	— — 1.26
	21.18			
O. W. Wilson, Spencer, . . . }	14.81 18.50	3.8 3.2	.56 .59	— — 1.15
	33.31			
Luther Crawford, New Braintree, grade { Jersey. }	12.37 14.75	4.4 4.0	.54 .59	— — 1.13
	27.12			
Melvin Shepard, Sturbridge, . . }	13.68 11.70	4.2 4.8	.57 .56	— — 1.13
	25.38			
L. W. Woodis, North Brookfield, No. 9, { }	15.62 18.00	3.4 3.2	.53 .58	— — 1.11
	33.62			
Henry F. Freeman, Warren, . . }	15.37 16.40	3.6 3.2	.55 .53	— — 1.08
	31.77			
C. D. Richardson, West Brookfield, . }	6.25 10.75	4.6 5.4	.29 .58	— — .87
	17.00			
C. L. Underwood, East Brookfield, { Bessie, 3d. }	8.06 7.87	6.0 4.4	.48 .35	— — .83
	15.93			
L. W. Woodis, North Brookfield, No. 8, { }	5.75 10.62	3.8 3.2	.22 .34	— — .56
	16.37			

Much of an improvement as is this method of getting at the merits of animals, it is open to the objection that animals which have been taken from their stalls, driven to the fair grounds and subjected to unnatural conditions and surroundings, may not do their best. If the production of milk is, as is believed by the best experts to-day, closely allied with the nervous temperament and system, then anything which disturbs that will have a deleterious effect upon the quality of milk. Consequently, the ideal way of testing milch cows is at the barn of the owner, where the cows are under perfectly normal and usual conditions. This test, while satisfactory to the student of dairy problems, has nothing spectacular which would draw a crowd to a cattle show, and hence, if generally undertaken by agricultural societies, must be for purely educational purposes, rather than from any motive of securing a popular "attraction." One such test has been made during the past year by the officer of the Bureau, for the Bay State Agricultural Society. The herd tested was that of Mr. Atherton Brown of Brookline. The test occupied two days and each of the four rows of figures represents one milking. The animals are registered Jerseys.

NAME OF COW.	Pounds of Milk.	Test.	Pounds of Fat.	Total (Pounds).
Celetta,	15.56	5.2	.809	—
	17.44	5.2	.906	—
	16.06	5.0	.802	—
	18.31	5.4	.988	—
	67.37	5.2		3.506
Fleuriste,	14.56	5.6	.815	—
	16.19	5.6	.906	—
	13.44	5.8	.779	—
	16.19	6.0	.971	—
	60.38	5.75		3.471
Young Clementine,	14.50	4.6	.667	—
	17.00	5.4	.918	—
	12.50	5.4	.675	—
	15.38	5.4	.830	—
	59.38	5.2		3.090

NAME OF COW.	Pounds of Milk.	Test.	Pounds of Fat.	Total (Pounds).
Miramas, Hebe,	15.38	4.6	.705	—
	14.94	5.3	.776	—
	12.63	5.4	.682	—
	15.50	5.4	.837	—
	58.45	5.15		3.000
Pedrissa,	12.19	6.0	.731	—
	12.44	6.0	.746	—
	11.38	6.0	.688	—
	13.31	6.0	.798	—
	49.32	6.0		2.963
Total for herd,				16.030

DAIRY MEETINGS.

The educational work done by the Bureau during the past year has been chiefly at such meetings as the acting executive officer could personally attend, thus carrying on this portion of our work at a minimum of draft upon our appropriation. Thirty-six dairy meetings have been held under the auspices of the Bureau, of which he has addressed thirty-two. Other speakers who have been employed for one or more meetings are Mr. George L. Clemence and Mr. J. L. Ellsworth of the Bureau, Dr. S. W. Abbott, secretary of the Board of Health, Dr. J. B. Lindsay of the Hatch Experiment Station, and Mr. Charles A. Dennen of the Cattle Commission. The comprehensive language of the statute quoted above enables dairy meetings to be held in connection with farmers' clubs, granges, and at other places which could not be reached by the regular institutes of the incorporated societies. Most of these meetings during the past year were conducted with charts, blackboards, milk tester, maps and other object-lesson paraphernalia, and, so far as could be ascertained, the meetings were well received.

In connection with these meetings and with the general work of the Bureau I have tested several hundred samples of milk with the Babcock tester. I have been also called to

represent the dairy interests of the State at the meeting of the Connecticut Dairymen's Association at Hartford, the New Hampshire Board of Agriculture at the Weirs, and the National Dairy Union at Chicago. I also responded to an invitation to address a committee of the Rhode Island Legislature on oleomargarine legislation, the laws of Massachusetts and their enforcement.

During the past year a compilation of the laws of the State, with the court decisions thereon, has been prepared and published.

SUGGESTIONS.

We continue of the opinion that the cause of honest and wholesome dairy products would be enhanced by what seems to us would be a better division of labor between this department and the Board of Health. It seems to us that the Board of Health ought not to be hampered by restrictive legislation compelling it to expend a prescribed proportion of its appropriation in the prosecution of commercial frauds, particularly in view of the fact that the healthfulness of the State's milk supply is being considered more than ever before, that the great advances recently made in bacteriology have given definite data to start with, and that there seems a call from all parts of the State, noticeable at meetings of medical associations, for an increased amount of work from the health stand-point. If the labor could be divided so that the Board of Health were free to do increased work along the line which its name naturally suggests, while the detection of commercial frauds was in the hands of this Bureau, we believe that great good would result.

Our experience this year has brought to our attention the fact that the size of the fines in oleomargarine cases places them beyond the jurisdiction of trial justices. By a special act their authority has been extended to include milk cases, and we suggest that this statute be broadened so as to include all dairy products and imitations thereof.

FINANCES.

The following is the manner in which the appropriation of \$7,000 has been expended during the past year:—

Appropriation by Legislature of 1896,		\$7,000 00
Members of the Bureau, travelling ex-		
penses and attending meetings,	\$397 35	
George M. Whitaker, travelling and		
office expenses, supplies, etc.,	834 65	
Agents' salaries,	1,937 62	
Agents' expenses,	2,095 32	
Chemists,	1,299 00	
Educational work,	285 27	
Printing,	149 54	
	<hr/>	
	\$6,998 75	
Unexpended,	1 25	
	<hr/>	
		\$7,000 00

Respectfully submitted,

GEORGE M. WHITAKER,

Acting Executive Officer.

Approved and adopted as the report of the Dairy Bureau.

D. A. HORTON,
GEO. L. CLEMENCE,
J. L. ELLSWORTH.

Boston, Jan. 15, 1897.



SEVENTH ANNUAL REPORT

OF THE

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED

UNDER CHAPTER 412, ACTS OF 1891.

JANUARY 15, 1898.

BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,

18 POST OFFICE SQUARE.

1898.

SEVENTH ANNUAL REPORT

OF THE

Mares:

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED

UNDER CHAPTER 412, ACTS OF 1891.

JANUARY 15, 1898.

BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,

18 POST OFFICE SQUARE.

1898.

614.32M3
II 132
1897
B

DAIRY BUREAU — 1897-98.

D. A. HORTON, NORTHAMPTON, *Chairman.*

GEO. L. CLEMENCE, SOUTHBRIDGE.

J. L. ELLSWORTH, WORCESTER.

Executive Officer.

W. R. SESSIONS, *Secretary of the State Board of Agriculture.*

Assistant to the Secretary and Acting Executive Officer, appointed by the Governor.

GEO. M. WHITAKER, BOSTON.

REPORT.

The membership of the Dairy Bureau has continued through the year the same as at the time of our last report, Mr. J. L. Ellsworth of Worcester having been reappointed. The active executive work has continued under the charge of George M. Whitaker, who has been reappointed for another biennial term. The statute title of this position is very misleading. The Bureau has had in its employment during the year three agents, the same ones previously reported, Messrs. J. W. Stockwell, George F. Baldwin and Charles C. Scott. Dr. Charles Harrington, the Boston milk inspector, and his staff are also agents of the Bureau, serving without compensation from the State, in order to promote harmony and efficiency of action. The chemical work has been done by Dr. B. F. Davenport.

OLEOMARGARINE.

The work of the Bureau in enforcing the laws relative to imitation butter has been statistically as follows:—

Number of inspections,	1,986
Samples taken,	212
Cases in court,	26

Of these, in only two instances were the defendants acquitted.

Complaints were made for the following causes:—

Selling or having in possession with intent to sell an imitation of yellow butter,	16
Serving oleomargarine in hotels and restaurants without giving notice,	5
Obstructing officers,	5

The court cases are fewer than last year, but do not represent any diminution in the work. The number of arrests is

not a gauge of the efficiency of a police force. The open selling of deceptive imitation butter has been suppressed, but as the illegal traffic in this imitation product is crowded into more limited quarters, the amount of detective work necessary to secure evidence of a violated law is largely increased. We have this year convicted some persistent violators of the law, in some cases driving them out of the Commonwealth. To bring this about necessitated in some cases weeks of careful work. One case in particular was of more than ordinary interest, and illustrates the difficulties attending the work and the chances that the greed of gain will lead unscrupulous persons to take.

Complaint came to us early in the year from a town in Middlesex County that a peddler had been through the town selling what purported to be Vermont creamery butter at a low price. Samples were secured, analyses made, and the article was found to be oleomargarine, which had been sold as butter from tubs labelled creamery butter, the United States revenue stamps and brands having been removed. We had no knowledge of the name of the party, his residence or his routes, and a number of months' work was necessary in order to supply this information. We found he had several teams and men, and was doing a large business. Then it was necessary to locate him somewhere, and get legal evidence of violation of law from samples whose identity could be positively traced. Then came warrants for his arrest, and, having obtained these, it was again necessary to find where he was to be at some particular time, and to have officers there to serve the papers upon him. We had learned that he was an athletic fellow, given to boasting of his strength, and as a matter of precaution six officers were detailed to surround the house in which he lived, and arrest him. He gave two of the officers a rough-and-tumble chase, but they secured him. Taken into court, he was found guilty, and paid two hundred dollars, other cases being held against him for good behavior. It was not long, however, before he was heard of at his old tricks, and after a number of weeks' work was located and re-arrested. This time he gave two officers a long chase, and was not taken until shots had been fired. Detained in the lockup at South Framingham, he managed to

break out, when he was met by a pal, and the pair rode hastily with one change of horses to Rhode Island, not, however, until the lockup keeper had implanted a bullet in his thigh.

This illustrates some of the difficulties in securing a big statute record. Itinerant peddlers retailing about the State without any particular route, never more than a half day in a place, are hard to get evidence against, and, having secured it, and a warrant, they are hard to re-locate and arrest. An agent working on such a case cannot take many samples or inspect many places of business.

Another reason for the diminution in the number of cases in court is an increased conservatism on our part in multiplying cases, as we find much hesitancy among judges of the district courts to entertain more than one complaint based on one transaction. The first case that we had this year was where (1) a man had sold an imitation of yellow butter; (2) had sold it as butter; (3) had sold it without the proper marks on the tub; (4) had sold it labelled "creamery;" and (5) sold it without the distinctive marks and signs required on the wagon,—a violation of five laws of the State, but only one complaint was made. In nearly every case that we have had this year three or four laws have been violated.

During the past year we have changed our policy relative to the statute under which we have brought cases. Heretofore, recognizing that the sale of oleomargarine as butter and when butter was called for was an unquestioned moral offence, as well as a statutory one, we preferred to bring cases under that law (section 2, chapter 280, Acts of 1894) when possible, feeling that we might appeal more strongly to the court than in a case for selling (or having in possession with intent to sell) an imitation of yellow butter. But experience showed us that as a practical matter we were in error. In the former class of cases we had more to prove. It was not only necessary to show that there had been a sale of an imitation of yellow butter, but it was necessary to prove beyond a reasonable doubt that it was sold in response to a call for pure butter. Not infrequently the defendant would attempt to save himself a fine either by contradicting our

agents outright in denying that butter was called for, or else by claiming that he did not understand, and supposed butterine was called for. In such cases the judge frequently was not convinced beyond a reasonable doubt that the offence charged had been proved. This year we have brought no cases under that statute, although in nine instances the oleo was sold as and for butter; but the complaint made charged that the defendant did sell, expose for sale, or have in his possession with intent to sell —

a certain quantity, to wit, one pound of a certain product commonly called oleomargarine, made partly out of an oleaginous substance not produced from unadulterated milk or cream from the same, and that said product was then and there in imitation of yellow butter produced from pure unadulterated milk or cream of the same.

The evidence in this case is more easily secured, and less easily contradicted. As a result, we have not lost one of these cases. Of the two cases lost, one was for obstructing an officer, in which case our evidence was weak. The other was where oleomargarine had been served for butter in a café connected with a hotel. On the trial of the case the proprietor of the hotel swore that he had leased the café, and was not responsible for its management. Although having no connection with this case, we were much interested in learning, a few weeks after, that the landlord's license to sell intoxicating liquors had been taken from him for violating the provisions of the liquor law.

The great source of our trouble continues to be the State of Rhode Island, which is behind the other New England States in pure-food legislation. The whole system of peddlers and of selling on orders has its headquarters in Rhode Island. In one case the court decided that selling on orders is an evasion of the law, and the party was convicted. The defence in this case introduced the following: —

DEAR SIR:— You are hereby requested to act as my agent in getting and delivering to me the following merchandise:—

Number

Date

Signature

Number of tub

Vermont.

The defence, having submitted this form of order, argued that the purchaser on signing this really made the defendant his agent; and that the defendant, as agent for the consumer, purchased these goods in Rhode Island. The judge held that the circumstances in the case convinced him that the order was a subterfuge, and an attempt to evade the law; consequently he held the defendant, who appealed, but withdrew his appeal and pleaded guilty in the superior court.

Doubtless in some instances oleomargarine is honestly desired. Unquestionably there are persons who from various motives prefer to use a mixture of lard and tallow in place of butter; but when it is sold in imitation of yellow butter, with a misleading name, or by companies with deceptive titles, there is a suspicion that consumers hardly realize what they are buying, and are more or less imposed upon by the deceptive nature of the brand or of the company doing business. In one instance we found that a peddler had been selling the goods marked "Oakdale Standard" as butter to ignorant families who did not know that this expression was the trademark of one of the large oleomargarine dealers. It is possibly true that now and then a person who honestly wants to purchase oleomargarine for legitimate use has been troubled to get it; but where any annoyance has been occasioned in the honest sale of a pound, we believe that the dishonest sale of ten pounds has been prevented. It should be remembered that it is perfectly legal to sell oleomargarine in this State, in a separate and distinct form, and in such a manner as will advise the consumer of its real character. But oleomargarine in that shape is a drug on the market. Its value as a commercial product comes not from the food value which the scientific men may find in it, but from the perfection of the imitation of butter. There is a theoretical oleomargarine of the chemists' laboratory, which has a food value; there is the oleomargarine of commerce, which as an imitation of butter is a constant temptation to swindling, and the temptation is seldom resisted. The supreme court of the United States says of the Massachusetts anti-color law:—

The suggestion that oleomargarine is artificially colored so as to render it more valuable and attractive can only mean that purchasers are deluded by such coloration into believing that they are

getting genuine butter. . . . The statute seeks to suppress false pretenses, and to promote fair dealing in the sale of an article of food. . . . Does the freedom of commerce among the States demand a recognition of the right to practise a deception upon the public in the sale of any articles, even those that may have become the subjects of trade in different parts of the country? . . . If an article compounded of cheaper ingredients can be made so closely to resemble butter that ordinary persons cannot distinguish it from genuine butter, the liability to deception is such that the protection of the public requires those dealing in the article in some way to designate its real character. . . . It is within the power of a State to exclude from its markets any compound manufactured in another State which has been artificially colored or adulterated so as to cause it to look like an article of food in general use, and the sale of which may, by reason of such coloration or adulteration, cheat the general public into purchasing that which they may not intend to buy. The constitution of the United States does not secure to any one the privilege of defrauding the public. The deception against which the statute of Massachusetts is aimed is an offence against society.

The following is a summary of the receipts, exports, stocks and consumption of butter at Boston for the past year, as compared with the year previous:—

	1897. Pounds.	1896. Pounds.
On hand January 1,	2,898,000	1,659,434
Receipts for the year,	51,107,033	50,972,255
Total supply,	54,005,033	52,631,689
Exports, deduct	3,286,333	3,156,741
Net supply,	50,718,700	49,474,948
Stock, deduct	2,620,680	2,898,080
Consumption,	48,098,020	46,576,868

The above statement shows that the consumption of butter supplied by the Boston market increased about three per cent last year, as compared with the year previous, and averaged about 925,000 pounds per week. If, by having

no laws regulating the sale of imitation butter, oleomargarine had been sold as butter, deceptively, to an amount equalling one per cent of the above consumption, the amount would be 480,980 pounds. We think that this assumption is a moderate one, from what we know of the history of the oleomargarine business, both before and after the passage of the laws, and the tendency to sell the mixture dishonestly. The average wholesale price of fresh-made extra creamery butter has been, during each month for the year, compared with two preceding years:—

	1897. Cents.	1896. Cents.	1895. Cents.
January,	20-22	22-26	24-26
February,	20-22	21-24	22-25
March,	19-23	22-24	20-23
April,	17½-22	16-22	19-21
May,	15½-18	15-17	17-19
June,	15-16	15-16½	18-20
July,	15½-16½	15-16½	18-19
August,	15½-19	15-17½	20-21
September,	18-22	15½-17½	20-22
October,	21-22½	16-20	21-23
November,	21-22	18-21	22-23
December,	21-23	20-23	23-28

If an amount of oleomargarine equal to one per cent of the sales of butter had been sold dishonestly, this amount at 20 cents per pound would equal \$96,196 to the credit of the law and its enforcement, leaving out of the account the butter supplied from other commercial centres in the State, like Worcester and Springfield. This is considering only the commercial side of the case, and not recognizing the fraud on the consumer. This fact in itself ought to be a vindication of the law and a proof of its economy.

Many States have patterned after Massachusetts in dairy legislation. Although Massachusetts is not emphatically a dairy State, it has set the pace for the whole country in dairy laws. This is in a measure due to the fact that the first color case to reach the United States supreme court came from Massachusetts, and was handled with such consummate ability by Hon. A. E. Pillsbury as to secure a vindication of the law in a decision from which we have quoted above. Since then many other States have followed our example, and adopted laws almost word for word like those of this State. Probably there is no other matter in which there is so much uniformity in legislation. Some States, however, in enacting this law have provided additional safeguards against the improper sale of a deceitful imitation product, some of which are as follows : —

California declares that any article made in semblance of butter, and designed to be used as a substitute for butter, is an imitation of butter. The use of imitation butter in public or private hospitals, asylums, eleemosynary or penal institutions is prohibited. No common carrier shall receive imitation dairy products for the purpose of forwarding or transporting the same, unless they are properly branded and receipted for under their true name. The use of the word "butterine" is prohibited. Search warrants may be issued for imitation butter or cheese, which may be seized if kept in violation of the law.

The laws of Ohio not only give the dairy commissioner authority to enter any place where dairy products are sold, but go so far as to authorize him to examine the books in such places.

In Minnesota, express agents, railroad officials and employees of common carriers are required to render to the dairy commissioner all the assistance in their power, when so requested, in discovering the presence of any imitation of pure butter or cheese. The commissioner is authorized to seize imitation and adulterated dairy products, and after order of the court sell the same for any purpose other than to be used for food.

Connecticut has a law authorizing the dairy commissioner to inspect the books of transportation companies, in order to trace illegal sales of oleomargarine.

Wisconsin authorizes the issuing of warrants to search places where imitation butter or cheese is believed to be concealed, and provides for the confiscation of such imitation dairy products, and their destruction under the direction of the court or magistrate.

Michigan provides that "the taking of orders or the making of agreements or contracts by any person, firm or corporation, or by any agent or representative thereof, for the future delivery of any of the articles, products, goods, wares or merchandise embraced within the provisions of this act, shall be deemed a sale."

Critics of the oleomargarine laws sometimes raise the point that there is sometimes a departure from strict honesty in handling some grades of real butter. There is no logic in this. If A is guilty of deception, his fault is not lessened because B has also practised deception. It is a fact that there are some things in the butter trade which cannot be wholly approved. But it doesn't help one man out of the mud to find some one else with his coat spattered. The processes for working and renovating low-grade butter have been so perfected as to render the product a satisfactory article for quick consumption; still, as it is ordinarily sold, it is more or less tainted with deception. The product really comes from the cow's udder, but when it is sold as "fresh creamery butter" it is a fraud on the consumer and an injury to legitimate business. This product till recently has been known in the trade as "process butter," and by that name it could be honestly sold, although when it was distributed by the retail trade it frequently became "fresh creamery." Latterly the trade has adopted the name of "sterilized butter," which is not only a misnomer, but deceptive. The word "process" was open to objections, but the expression "sterilized" is even worse. We have had a number of specimens of these kinds of butters analyzed, and in each case the chemist has reported that the product was in some respects unusual, although he was obliged to class it with the pure butters.

We understand that the process of melting and aerating butter and re-working it in fresh milk was begun some seven or eight years ago. From that starting point the business has

extended so that there are large factories in some six or eight different places in the west. We have seen it stated that the total output of these places is fully four hundred tubs a day. The exact method of making these goods is not known. In some cases different firms have varying methods peculiar to themselves, but in a general way the process is something like this: the butter is bought either from farmers or from dealers, melted into oil, carefully strained, then aerated by pumping currents of air through it, and finally chilled by dropping onto ice or a cold surface. The granules are then churned with milk, and the product is salted, worked and packed. Fair flavor and character are the rule, but, having been once melted, the butter is peculiarly sensitive, and quickly loses its freshness; some lots become tallowy. We have a suspicion that some dishonest manufacturers may mix in more or less tallow and lard in the process of manufacturing this "sterilized" butter. We found one sample in the hands of a reputable retail grocer which was unquestionably oleomargarine. We were able to trace the shipment with such directness through a leading Boston wholesaler to a large Chicago manufacturer that we felt no end of justice would be promoted by a prosecution in this State. The facts, however, were placed in the hands of the Illinois authorities for further investigation.

MILK.

More attention has been given to milk than any previous year. Two hundred and thirteen samples have been taken, though only one case was put into court. In this the milk was actually adulterated, but it was lost by a ruling on a law point by an associate justice of the court sitting during the vacation season. A transportation corporation had a café at one of its stations, and served adulterated milk. Samples taken tested 10.42 and 8.14 per cent of milk solids. The manager of the café was complained of, and his attorney raised the point that, under the statute holding responsible either the principal or his agent or servant, we could hold the corporation itself or the waiter who served the adulterated milk; but the attorney argued that the manager of whom we had complained was neither the servant who sold

the adulterated milk nor the principal. The justice ruled that, as the manager of the café was not personally present at the time that the waiter served the milk, he was not responsible. Another case was brought before the regular justice of the court at the conclusion of the vacation season, but by this time the defendant had left the State and could not be found.

The agricultural papers and scientific men have been discussing the idea of a statute standard of milk to an unusual extent during the past year. The principle is well established in Massachusetts, and is endorsed both by consumers and producers. Farmers' organizations have time and time again passed resolutions favoring it. Many cows produce milk of less than 13 per cent solids, but they are a minority. The Massachusetts law says milk below 13 per cent — with an exception of some summer months — is not "of standard quality," and is therefore unmerchantable as standard milk. One critic says: "What the farmer needs and has a right to ask is that the law shall not step in and try to punish him because the Creator did not make all cows alike." This is a misapprehension of the spirit of the law. Milk of standard price must be of standard quality. The opposition to the law has hitherto been largely from men whose cows produced milk poorer than the average, and who wanted to sell this poorer milk as standard milk. These persons, under the fallacious pretext that cows could not give as good milk in the summer as in winter, have succeeded in getting the very generous exception of five months in which 12 per cent is declared to be standard milk. This assertion about summer milk is not founded on fact. Mr. Clemence of the Dairy Bureau has for several years made occasional tests — usually about once a month — of the mixed milk of his herd, mostly grade Shorthorns, and he has not only found it fully up to the standard, but he has found it very uniform in quality, varying less than .4 of 1 per cent, and usually less than .2 of 1 per cent, from month to month. Many similar experiments are on record. The most recent is from the New Jersey Experiment Station. The herd there consisted of 28 cows; 23 were of mixed breeding, with 2 each of Holstein and Guernsey blood and 1 Jersey. From 18 to 26

cows were milked each month. Each month except one several fresh cows were introduced, as many as 4 each in September and March. The following is the average per cent of fat in the mixed milk (fat is the most variable element of milk, and the one that governs its quality) : —

May,	4.2	November,	4.2
June,	4.3	December,	4.2
July,	4.3	January,	4.3
August,	4.4	February,	4.1
September,	4.3	March,	4.0
October,	4.4	April,	4.1

This shows the constant quality of herd milk, and that there is no marked seasonable falling off during any particular month or months.

The present attack on the statute standard comes from persons who preach that milk should be sold according to quality. With this contention we are in sympathy, and believe that milk will be sold that way in the future. There is no sense in selling 10 or 13 or 16 pounds of food all at the same price. But the advance step should not be taken at the expense of losing any of the advantages of the present law. We hardly think that the times are yet ripe for such a change, as, from the stand point of those having some experience in enforcing the law, it would let in a large amount of adulteration.

Laws against adulteration seem as yet to need a standard. Wealthy or intelligent people could discover fraud in milk, but the ignorant would suffer imposition, and the poor might be comparatively helpless.

There is nothing in the law now to prevent milk being sold on its merits in three grades ; 1st, extra ; 2d, standard ; 3d, skimmed.

A man with Jersey or Guernsey stock is now at liberty to make a 14 or 15 per cent milk, grade it as extra, guarantee its extra quality, and sell it at an extra price if he can find customers. On the other hand, milk low in solids can be sold at a low price by labelling it skimmed milk, — which in some instances is not far from the truth.

We hope to see many enterprising dairymen try this experiment of selling extra milk at an advance from the going

price. This ought to prove advantageous to them, and also an education to the public, being an object lesson of the differing values of milk. It would thus serve to bring nearer the time when it may be expedient to change the laws relative to the statute standard.

The following is the result of some analyses of milk taken from milkmen by officers of the State Dairy Bureau in the regular discharge of their routine duties, and throws an accurate side light on the per cent of solids sold. These samples were taken in May and June.

Worcester.

Milkman No. 1,	.	.	12.84	Milkman No. 15,	.	.	13.48
No. 2,	.	.	12.88	No. 16,	.	.	13.64
No. 3,	.	.	12.20	No. 17,	.	.	14.08
No. 4,	.	.	12.60	No. 18,	.	.	14.02
No. 5,	.	.	12.76	No. 19,	.	.	12.62
No. 6,	.	.	13.00	No. 20,	.	.	14.22
No. 7,	.	.	14.34	No. 21,	.	.	12.52
No. 8,	.	.	12.40	No. 22,	.	.	12.12
No. 9,	.	.	14.22	No. 23,	.	.	13.78
No. 10,	.	.	12.04	No. 24,	.	.	12.40
No. 11,	.	.	13.26	No. 25,	.	.	12.92
No. 12,	.	.	12.84	No. 26,	.	.	13.02
No. 13,	.	.	12.00	No. 27,	.	.	12.52
No. 14,	.	.	12.90	No. 28,	.	.	14.32

Taunton.

Milkman No. 1,	.	.	14.14	Milkman No. 4,	.	.	14.28
No. 2,	.	.	12.54	No. 5,	.	.	13.54
No. 3,	.	.	13.02				

New Bedford.

Milkman No. 1,	.	.	12.48	Milkman No. 16,	.	.	13.36
No. 2,	.	.	12.64	No. 17,	.	.	14.30
No. 3,	.	.	12.18	No. 18,	.	.	12.80
No. 4,	.	.	13.42	No. 19,	.	.	15.02
No. 5,	.	.	13.10	No. 20,	.	.	13.90
No. 6,	.	.	11.84	No. 21,	.	.	13.54
No. 7,	.	.	14.00	No. 22,	.	.	13.60
No. 8,	.	.	12.98	No. 23,	.	.	12.74
No. 9,	.	.	12.52	No. 24,	.	.	13.36
No. 10,	.	.	13.08	No. 25,	.	.	13.26
No. 11,	.	.	13.66	No. 26,	.	.	13.84
No. 12,	.	.	13.88	No. 27,	.	.	12.64
No. 13,	.	.	13.90	No. 28,	.	.	12.82
No. 14,	.	.	14.60	No. 29,	.	.	13.46
No. 15,	.	.	13.40	No. 30,	.	.	12.82

These samples were taken at summer resorts during July and August : —

No. 1,	12.72	No. 18,	11.76
No. 2,	18.04	No. 19,	12.36
No. 3,	16.96	No. 20,	12.36
No. 4,	12.56	No. 21,	11.34
No. 5,	8.14	No. 22,	10.42
No. 6,	13.74	No. 23,	14.10
No. 7,	14.06	No. 24,	12.51
No. 8,	12.22	No. 25,	11.10
No. 9,	12.46	No. 26,	10.78
No. 10,	12.84	No. 27,	10.28
No. 11,	14.16	No. 28,	12.46
No. 12,	12.40	No. 29,	11.48
No. 13,	12.84	No. 30,	16.26
No. 14,	12.48	No. 31,	12.46
No. 15,	19.02	No. 32,	12.86
No. 16,	15.46	No. 33,	12.14
No. 17,	12.54		

The samples of abnormally high milk, 19, 18, 16, per cent etc., were probably cases where there was carelessness in properly mixing the milk, and the samples which our agent happened to get were taken from the top of the can or tank. In those cases we notified the parties, recommending more care in mixing, for the person who would be served with milk from the bottom of the can or tank would have that which was correspondingly poor.

In the cases of milk which tested low we took a second sample to strengthen our position, and in every case but one the second sample was an improvement on the first, confirming still further our theory that there exists too much carelessness about properly agitating and mixing the milk. In the one exception, to which allusion is made above, the sample taken at the first visit of our agent tested 10.28, and that taken at a second visit tested 8.14.

The principal critics of the law come largely from towns which have shipped milk for many years to Boston, where there is none of the tonic that comes from producer meeting consumer, and where cows have been bred for large quantities rather than for quality.

During the past year the newspapers have reported an increased attention to the sanitary phases of the milk question.

Medical and health bodies have been discussing them, and considering possible legislation. It is a fact that legislation has hitherto looked more after the commercial fraud of selling adulterated milk, or milk not of standard quality, than it has at the health phases of the case. It is also a fact that the modern advances in bacteriology have given definite and accurate data on which we can now base intelligent and advanced action. Hence there is a good opportunity for Massachusetts to take a forward step, and for the Legislature to do something looking to enhancing the quality of the State's milk supply. But such legislation should be discreet, and should, especially at the outset, guard against steps too far in advance of the ideas of producers, or which might tend to the annoyance of petty officialism. Michigan has a system of inspection which merely leads to publishing reports of what the inspectors find. The publicity of these reports is expected to work a correction of the evils noticed. A measure as mild as this ought not to arouse great opposition, and yet it would be strong enough to have a beneficial educational influence which would tend to correct evils now existing so far as producers are concerned. A favorable report would be a good advertisement of any producer. Any filthy or unsanitary conditions at the city end of the business among wholesalers or peddlers would require different action. I submit herewith a few samples of the results of Michigan inspection, as taken from printed reports of the dairy commissioner of that State:—

At Lowell.

R. Rider.—Cows clean; stables clean; ventilation good; sanitary conditions fair; uses well water.

J. Kramer.—Cows fairly clean; stables unclean; ceilings dusty and floors dirty; ventilation good; sanitary conditions very poor; uses spring water.

At Howard City.

A. S. Stodard.—Cows poor but fairly clean; ventilation poor; sanitary conditions fair; uses well water.

William O'Donald.—Cows clean; stables unclean; ventilation good; sanitary conditions fair; uses creek water.

At Big Rapids.

C. E. Draper. — Cows clean; stables clean; ventilation fair; uses well water.

M. Boynton. — Cows clean and in good condition; stables very unclean; ventilation fair; sanitary conditions poor; well water used.

A. Card. — Cows clean; stables low and extremely dirty; drainage poor; ventilation poor; sanitary conditions very bad.

At Cadillac.

C. J. Holman. — Stables unclean; drainage imperfect and manure allowed to accumulate near stables; ventilation fair; sanitary conditions poor.

E. N. Reynolds. — Stables fairly clean; ventilation fair; sanitary conditions poor; uses lake water.

M. Berridge. — Cows clean; stables clean; ventilation good; sanitary conditions of stables good, of yard poor; well water used.

At Belding.

C. E. Lewis. — Cows fairly clean; stables fairly clean; ventilation good; sanitary conditions poor; well water used; was feeding garbage from the house.

H. C. Angel. — Cows clean; ceilings of stables dirty; drainage poor; ventilation good; sanitary conditions of yard very bad; uses spring water.

G. C. Devine. — Cows part clean and part dirty; stables clean; ventilation good; sanitary conditions of yard poor; uses well water.

At Ionia.

A. M. Welch. — Cows in very good condition; stables exceptionally clean; ventilation good; sanitary conditions excellent; uses spring water; drainage good. Cows are cleaned twice a day; wells and ceilings of stables whitewashed twice each year; has clean, well-ventilated cooling room, and all modern appliances for handling milk in a neat and systematic way.

W. D. Place. — Cows clean; stables low, with clean floors but dusty ceilings; ventilation poor; sanitary conditions poor; uses creek water.

H. Jackson. — Cows part clean and part dirty; stables unclean; drainage poor; stables exposed to open scaffolding; ventilation fair; sanitary conditions poor; uses creek water. Manure is allowed to accumulate near barn.

A. E. Jackson. — Cows part clean and part dirty; stables unclean; drainage poor; ventilation fairly good; sanitary conditions poor; uses creek water.

G. Percival. — Cows part clean and part dirty; stables unclean, ventilation good; sanitary conditions poor; uses cistern water.

L. A. Cornell. — Cows clean and in good condition; stables in poor condition; ventilation poor; sanitary conditions of yard poor.

M. S. Sprague. — Cows fairly clean; stables unclean; ventilation fair; sanitary conditions poor; uses river water.

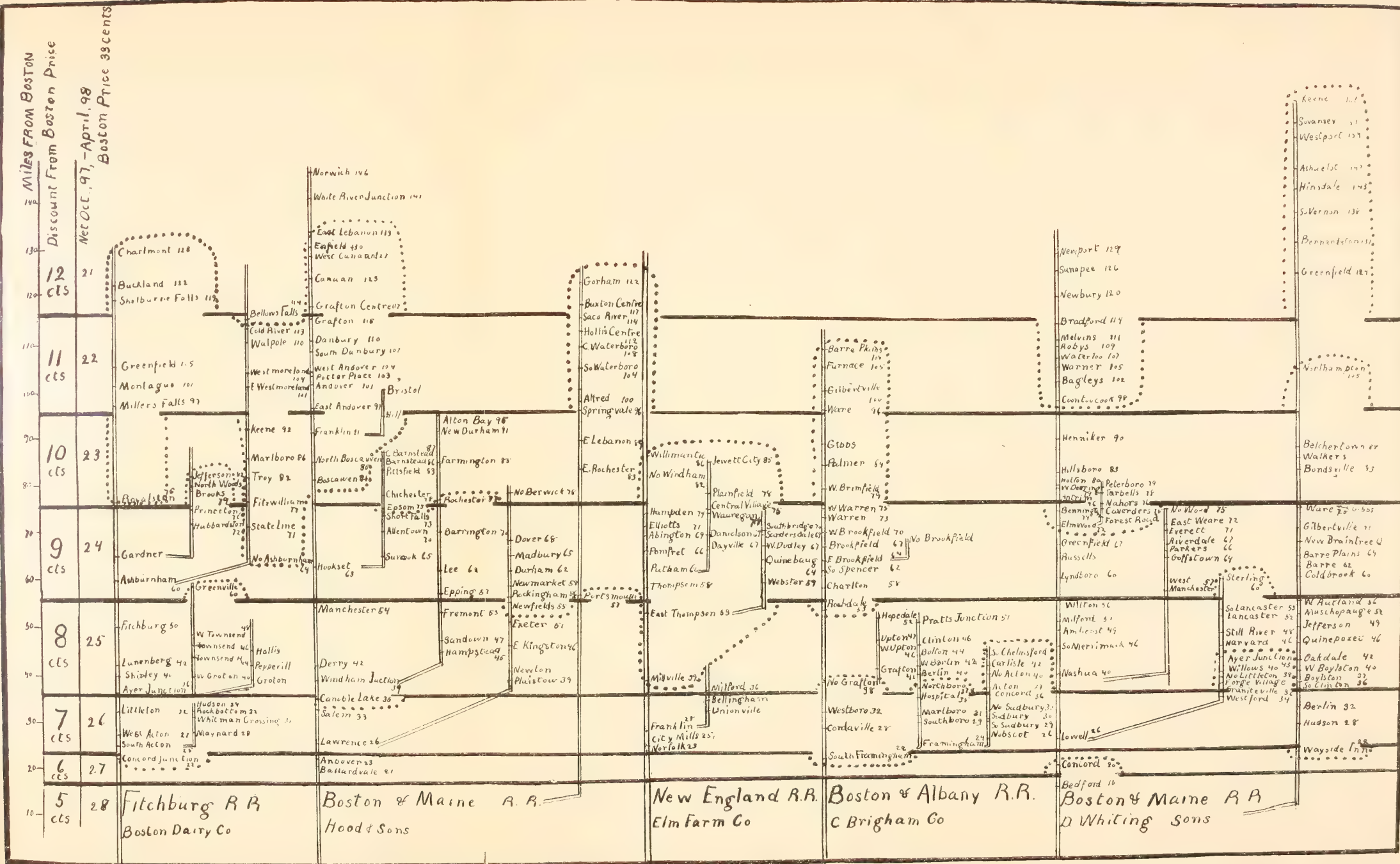
During the past year considerable time has been given by the acting executive officer of the Bureau to work in connection with the milk business in the "Greater Boston." This is a phase of dairying which last year sent over the railroads 11,798,191 cans of milk, — an average of 32,320 cans per day. If the farmers received on an average 20 cents per can, we have here an industry amounting to \$2,359,628 to the producers. The retail price in the cities varies considerably under different circumstances. Milk is being sold more and more in the grocery stores, and at a cut price. In not a few stores it is sold at less than cost, as a bid for other trade. We find retail sales made at all the way from 4 to 7 cents per quart. If we consider 6 cents an average price, the sales, which were 8,788,000 cans, amount to \$4,456,000. These figures relate only to the milk that is brought into the city by railroad by the large milk wholesalers. Other statistics are not available, because the milk is brought in in different ways. It is generally believed — and the best information that we can get confirms it — that over 25, almost 30, per cent more comes in by wagons from near-by territory. Dr. Harrington has kindly given me a list, showing that 5,232 cans daily are brought into the municipality of Boston. The competition of this wagon milk and of railroad milk has been very sharp this year. If, of the amount of milk sold by the wholesalers, the amount of adulteration should equal 1 per cent of the sales, it would amount to 87,385 cans of milk. From the stand-point of the consumer, at the average price of 6 cents per quart this means \$35,566 paid unjustly for water, — a \$35,000 steal. From the stand point of the producer, netting on an average 20 cents per can, it means a wrong of \$17,477. This amount could be easily doubled were we to take in the whole State, with such thrifty, grow-

ing cities as Lawrence, Springfield, New Bedford, Holyoke, Taunton, Fitchburg, Gloucester and others. No one would for a moment argue but what, were it not for the existing laws and the way they are enforced, the percentage of adulteration would be much more than 1 per cent.

The figures below give the amounts of receipts and sales of railroad milk—in $8\frac{1}{2}$ quart cans—as reported by the wholesalers' association during the year of 1897, also the figures of previous years, for purposes of comparison:—

	Received.	Sold.	Surplus.
January,	923,852	705,324	218,528
February,	835,115	639,952	195,163
March,	960,084	719,814	240,270
April,	976,996	733,298	243,698
May,	1,105,325	759,875	345,450
June,	1,115,234	752,038	363,196
July,	1,013,552	789,849	223,703
August,	966,058	720,374	245,684
September,	956,445	732,795	223,650
October,	1,037,764	751,944	285,820
November,	962,552	708,459	254,093
December,	945,274	724,850	220,364
Total,	11,798,191	8,738,572	3,059,619

	Receipts.	Sales.	Surplus.
1896,	10,772,108	8,087,378	2,684,730
1895,	9,856,500	8,040,732	1,815,768
1894,	9,705,447	7,657,421	2,048,026
1893,	9,263,487	7,619,722	1,643,765
1892,	9,212,667	7,315,135	—



Railroad stations from which milk is shipped to Boston, their relative distances from the city and the price paid at each station.

The three million cans of surplus milk have been kept off the milk market by the contractors, thereby tending to steady the price and keep it more uniform than if the whole product was placed upon the market to be sold for what it would bring, as is the case with other articles of merchandise. This surplus kept off from the market has been made into butter by the wholesalers, and they return to the farmers the average jobbing price of butter, less the charge for manufacturing. This surplus milk has averaged to net the farmers 13.33 cents per can during the year. The lowest price was received in May, June and July, 11 cents per can; the highest in December, 15.34 cents. The price received for sale milk is the same as last year. It has been kept quite uniform from year to year, by the system in which Boston milk is handled. The price of surplus milk depends upon the market value of butter, and has averaged one-third of a cent more for 1897 than it did for 1896.

For the months of April, May, June, July, August and September, the price to the farmers at their several railroad stations was 19 to 26 cents per $8\frac{1}{2}$ quart cans. During the other months of the year, January, February, March, October, November and December, the price ranged from 21 to 28 cents. This range of prices is adjusted by an agreement between the producers and the wholesalers that the price shall decrease by a regular system as the distance from the city and the cost of transportation increases.

We present herewith a plan illustrating this. The vertical parallel lines represent the railroads over which milk is shipped, drawn as air lines. We have marked on each one the location of each milk-shipping station, and its relative distance from Boston as the railroads run. We have drawn across this map horizontal lines, showing the belts of the different prices. If the arrangement above alluded to between the producers and the wholesalers was lived up to literally, these horizontal lines in all cases would be complete and exactly parallel with each other. In some cases it is necessary to depart from the literal application of this rule, as where milk is taken from a branch road which crosses the main line on some other route. For instance, milk is brought to Boston from Barre by the direct line of the Cen-

tral Massachusetts, and also over the Boston & Albany road. By one way Barre is 108 miles from Boston, and by the other 64. But it would be difficult to pay different prices at the same place, and the 64-mile price must govern. These variations from the schedule are noted by dotted lines about the towns affected.

The milk laws of other States contain some interesting suggestions.

Minnesota prohibits the keeping of cows for the production of milk for market or for manufacturing the same into articles of food "in a crowded or unhealthy condition." The dairy commissioner is required to furnish all the dairies shipping milk to the city, and all the peddlers or venders of milk in the cities within the State, with blanks for the purpose of making a report of the amount of milk and dairy goods handled, "and all milk dairies, milk venders and milk peddlers shall send to the State food and dairy commissioner quarterly reports of all the business done by each and every such person, firm or company in handling dairy products during the last three months past, as designated under the different headings of printed blanks. No person shall sell or offer for sale any cream that contains less than 20 per centum of fat."

Minnesota is the only State, so far as we know, that has a law relating to clean cans. It is as follows: "Any person, persons, firm or corporation who receives any milk or cream in cans, bottles or vessels which have been transported over any railroad or boat line, where such cans, bottles or vessels are to be returned, shall cause the said cans, bottles or vessels to be emptied before the said milk or cream contained therein shall become sour, and shall cause the said cans, bottles or vessels to be immediately washed and thoroughly cleansed and aired."

Wisconsin authorizes its dairy commissioner to make regulations when needed concerning the cleanliness of utensils, rooms, buildings, etc., used in the sale of dairy products.

Chapter 425, Acts of 1894, is as follows: "No producer of milk shall be liable to prosecution on the ground that the milk produced by him is not of good standard quality, unless the milk alleged not to be of such quality was taken

upon the premises or while in the possession or under the control of the producer by an inspector of milk or by the agents of the Dairy Bureau or State Board of Health, or collector of samples duly authorized by such inspector, and a sealed sample of the same given to the producer.”

This was enacted in the expectation that it would in some way save innocent farmers from any hardship growing out of the enforcement of the milk laws. It has not accomplished any such purpose, but has hindered the prosecution of those who have sold adulterated milk.

Chapter 264, Acts of 1896, section 1, says: “No person shall sell or offer for sale or exchange, in hermetically sealed cans, any condensed milk or condensed skim-milk, unless in cans which are distinctly labelled with the name of the person or company manufacturing said condensed milk or skim-milk, the brand under which it is made, and the contents of the can.”

The Bureau has been asked during the year to pass upon the meaning of the word “contents,” in the last line. The popular opinion prevailed that it required either the weight or the analysis of the contents. The question was referred to the Attorney-General, who held that the word refers back to the words “condensed milk or condensed skim-milk,” in the second, fourth and fifth lines, and that the law would be complied with if the can should be labelled “condensed milk,” or “condensed skim-milk,” as the case might be. This seems to take out of the law what seems to be its spirit.

Ohio has a law which requires that the proportion of milk solids contained in condensed milk shall be in amount the equivalent of 12 per cent of solids, in crude milk, and of such solids 25 per cent shall be fat. Condensed milk cannot be sold in that State unless the same is made from unadulterated and wholesome milk from which the cream has not been removed.

In view of the great variation in the quality of condensed milk, and its increasing use, similar legislation may be needed in this State.

The sale of cream is increasing. Maine is the principal source of the cream in the markets of Boston and other

Massachusetts cities. Comparative statistics are not available at the time of making up this report, but the following compares six months of 1897 with preceding years : —

The Hampden, Me., creamery makes the following report of its business for the last three years, showing the increase in the use of cream (the figures are for gallons) : —

Thick Cream, 40 Per Cent Butter Fat.

	1894.	1895.	1896.	First Six Months of 1897.
Boston and vicinity, . . .	33,466	40,141	43,542	28,034
Beverly, Lynn and Salem, .	8,033	8,811	9,482	4,333

EDUCATIONAL.

The statute creating the Dairy Bureau imposes some educational work upon it. So far as this can be done by the acting executive officer, it incurs no extra expense, as he is a salaried officer. He, therefore, holds himself in readiness to respond to calls of granges, farmers' clubs, milk producers and others, for talks on various phases of dairying, as desired. He has answered eighteen such calls this year. Many of these talks have been illustrated by operating the Babcock milk tester, and in other ways so as to make them interesting object lessons as far as possible. In addition, the members of the Bureau, Dr. Lindsay, Dr. Peters and a few others, have, in exceptional cases, been engaged.

A bulletin on the care of milk has been prepared for circulation among the producers of sale milk. A circular of warning to butter-makers, regarding fraudulent cream "ripeners," has also been issued.

Last August a convention of dairy and food commissioners was held in Detroit, and a permanent organization effected. The States represented in the governing board are Ohio, Michigan, Iowa, Pennsylvania and Massachusetts. The association can be of great value in furnishing a means for an interchange of ideas, experiences and practices. Though much of the time of the convention was occupied with rou-

tine business, many valuable points and suggestions were received.

FINANCES.

The following is the manner in which the appropriation of \$7,000 has been expended: —

Members of the Bureau, travelling expenses and attending	
meetings,	\$446 00
Agents' salaries,	2,350 50
Agents' expenses,	2,473 08
Chemist,	858 00
George M. Whitaker, travelling and office expenses, sup-	
plies, mileage tickets, etc.,	729 41
Educational work,	102 71
Printing,	28 92
Supplies,	11 38
<hr/>	
Total,	\$7,000 00

GEORGE M. WHITAKER.

Accepted and adopted as the report of the Dairy Bureau.

D. A. HORTON.
GEO. L. CLEMENCE.
J. L. ELLSWORTH.

EIGHTH ANNUAL REPORT

OF THE

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED

UNDER CHAPTER 412, ACTS OF 1891.

JANUARY 15, 1899.

BOSTON:
WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
18 POST OFFICE SQUARE.
1899.

EIGHTH ANNUAL REPORT

OF THE

^{Mass:}
= DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED

UNDER CHAPTER 412, ACTS OF 1891.

JANUARY 15, 1899.

BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
18 POST OFFICE SQUARE.

1899.



614.32M3

D13n

1898

B

DAIRY BUREAU—1898-99.

D. A. HORTON, NORTHAMPTON, *Chairman.*

J. L. ELLSWORTH, WORCESTER.

C. D. RICHARDSON, WEST BROOKFIELD.

Executive Officer.

W. R. SESSIONS, *Secretary of the State Board of Agriculture.*

Assistant to the Secretary and Acting Executive Officer, appointed by the Governor.

GEO. M. WHITAKER, BOSTON.

REPORT.

Massachusetts stands high among the States of the Union as a manufacturing State. Many of her towns and cities have a national reputation as manufacturing centres for various products, such as cotton cloth, boots and shoes, spectacles, watches, whips, etc. The census for 1895, just published, shows that the value of the manufacturing plants in the State aggregates \$325,000,000, cotton manufacturing leading, with \$92,000,000 invested; the value of the agricultural property of the State is \$220,000,000. So that, although Massachusetts is pre-eminently a manufacturing State, and as such is prominent among the States, it is two-thirds as much of an agricultural State as it is a manufacturing State, so far as investment in real estate, machinery, buildings, water power, etc., are concerned.

Of the agricultural products of the State, dairying leads. The census for 1895 gives the value of the dairy products of the State as follows:—

Butter,	.	.	.	.	.	.	.	.	\$1,506,638
Cheese,	.	.	.	.	.	.	.	.	11,661
Cream,	.	.	.	.	.	.	.	.	1,011,604
Milk,.	.	.	.	.	.	.	.	.	13,704,146
									<hr/>
									\$16,234,049

Hay and fodder are second; but, as most of the hay and fodder grown in the State is fed to dairy animals, it is fair to add quite a proportion of the \$12,000,000 value of hay and fodder to the above \$16,000,000. In the cream furnished to creameries and in other ways there is a possible duplication of values, as the census enumerates each separate article in every step of manufacturing, because frequently the manufactured product of one industry is the raw material of another. But, making a reasonable deduction for duplications, and then adding a proper proportion of

the \$12,000,000 value of hay and fodder grown, we find that beyond question the dairy products of the State are more in value than one-half of all agricultural products, — \$53,000,000. If, then, dairying is the leading specialty in agriculture, and if agriculture in value of plant is two-thirds of the manufacturing industries of the State, we find that dairying is of much importance in Massachusetts. And it is fitting that legislation should pay particular attention to pure, honest, wholesome dairy products, in the interests of both consumer and producer.

The personnel of the Dairy Bureau suffered a change at the beginning of the year by the expiration of the term of office of Mr. George L. Clemence of Southbridge, delegate to the Board of Agriculture from the Worcester South Agricultural Society. Mr. C. D. Richardson of West Brookfield was elected to the State Board in his place, and appointed on the Dairy Bureau. The term of office of Mr. D. A. Horton, as one of the members at large of the Board of Agriculture, having expired, he was reappointed by the Governor, reappointed on the Board and re-elected chairman.

The actual executive work of the Bureau has continued under the supervision and direction of George M. Whitaker. The Bureau has employed during the year only two regular agents, Messrs. J. W. Stockwell and George F. Baldwin, who have been in our employ for several years. The place of the third, made vacant by resignation of Mr. Charles C. Scott, has not been filled, but temporary agents have been employed from time to time to do special work. Dr. Charles Harrington, the Boston milk inspector, and his staff, continue as agents of the Bureau, serving without expense to the State, in order that in an emergency their efficiency of action may be increased. The chemical work of the Bureau has been done by Dr. B. F. Davenport for the eastern part of the State, and by the Hatch Experiment Station for the western part.

The work of the Bureau during the past year has been conducted along the same general lines as heretofore, the principal difference being in paying increased attention to the milk supply.

STATISTICAL WORK.

The statistical report of our work has been as follows : —

Inspections of stores, wagons and railroad stations, for illegal keeping of imitation butter,	1,351
Samples taken of real or imitation butter,	230
Samples taken of milk,	901
Samples taken of cream,	6
Samples taken of cheese,	1
Samples taken of condensed milk,	2

The Bureau has had in court during the past year 60 cases, as follows : —

Having milk of less than standard quality in possession with intent to sell,	30
Having milk to which preservative had been added in possession with intent to sell,	9
Having an imitation of yellow butter in possession with intent to sell,	13
Serving oleomargarine in hotels and restaurants without giving notice,	3
Obstructing officers in the prosecution of their work,	5
	<hr/> 60

In addition to these, evidence has been secured in five other cases, complaints have been made and warrants issued, but the officers have been unable to find the defendants, who have left the vicinity if not the State. Four of these were imitation butter cases, and one for obstructing an officer.

Of the above 60 cases in court, in only one instance was the defendant acquitted and discharged. In that case he was charged with obstructing an officer who was engaged in getting samples.

IMITATION BUTTER.

The Bureau has enforced the laws regulating the sale of imitation butter as vigorously as usual, and along the same general lines. Stores are visited and samples taken or purchases made, suspicious “butter” wagons are overhauled and inspected, and various clues followed in such manner as the exigencies of each particular case seem to demand. Some-

times a line of investigation may be followed for several days with no reportable results in number of inspections made or samples taken. This part of our work is like all other kinds of detective work, and has a wholesome effect on would-be law-breakers far beyond the story told by any mere statistics.

During the year we have made 1,351 inspections of stores, wagons and railroad stations, and taken 230 samples. We have had 21 cases in court, and would have had 5 more could the parties have been found. Of the 21, we lost only 1. The charges were as follows:—

Violating anti-color law,	13
Violating hotel-restaurant law,	3
Obstructing an officer,	5
	<hr/>
	21

During the past year one dealer in imitation butter has served a term in the house of correction in default of a fine.

Of the 13 violations of the anti-color law, above reported, the imitation product was sold as and for butter in several instances; but complaints were made for violating the anti-color law, for technical reasons of detail in connection with the trial of the cases. Evidence of more sales of the deceptive product when butter was called for would have been secured were not the agents so well known.

As we have previously reported, the open sale of imitation butter seems to have been practically suppressed. It is an exceptional case where a person can purchase it, to take away with him, in any store in the Commonwealth. Yet, in spite of this, considerable quantities are consumed within the Commonwealth, mostly sold under various subterfuges. Itinerant peddlers dispose of some, and stores that “take orders” still further evade the law, while in some instances officers in charge of public institutions are purchasers. The amount sold is very small, compared with what would be sold were there no laws. In most cases the ultimate consumer does not know what he is eating, and in many cases the purchaser is equally ignorant.

The principle on which these laws are based has been endorsed by the State and national courts, and by the Legis-

latures of many States. Thirty-three States in the Union now have laws restricting the sale of imitation butter, and in 28 the laws are similar to those of Massachusetts.

The decision of the national supreme court, favorable to the Massachusetts anti-color law, in the Plumley case, has been reaffirmed in cases from the States of Pennsylvania and New Hampshire. Pennsylvania absolutely prohibited the sale of oleomargarine, and New Hampshire permitted the sale only when colored pink. The supreme court decided that both of these laws are unconstitutional; but in making that decision it alludes to the Plumley case, which it reaffirms, and explains wherein the Pennsylvania case differs from the Massachusetts case. It says:—

The statute in that case [Plumley] prevented the sale of this substance in imitation of yellow butter produced from pure, unadulterated milk or cream of the same; and the statute contained a proviso that nothing therein should be “construed to prohibit the manufacture or sale of oleomargarine in a separate or distinct form, and in such manner as will advise the consumer of its real character, free from coloration or ingredients that cause it to look like butter.” This court held that a conviction under that statute for having sold an article known as oleomargarine, not produced from unadulterated milk or cream, but manufactured in imitation of yellow butter produced from pure, unadulterated milk or cream, was valid. Attention was called in the opinion to the fact that the statute did not prohibit the manufacture or sale of all oleomargarine, but only such as was colored in imitation of yellow butter produced from unadulterated milk or cream of such milk. If free from coloration or ingredient that caused it to look like butter, the right to sell it in a separate and distinct form, and in such manner as would advise the consumer of the real character, was neither restricted nor prohibited. The court held that under the statute the party was only forbidden to practise in such matters a fraud upon the general public; that the statute seeks to suppress false pretences and to promote fair dealings in the sale of an article of food; and that it compels the sale of oleomargarine for what it really is by preventing its sale for what it is not; that the term “commerce among the States” did not mean a recognition of a right to practise a fraud upon the public in the sale of an article, even if it had become the subject of trade in different parts of the country. It was said that the Constitution of the United States did not take from the States the power of

preventing deception and fraud in the sale within their respective limits of articles, in whatever State manufactured, and that that instrument did not secure to any one the privilege of committing a wrong against society.

It will thus be seen that the case was based entirely upon the theory of the right of a State to prevent deception and fraud in the sale of any article, and that it was the fraud and deception contained in selling the article for what it was not, and in selling it so that it should appear to be another and a different article, that this right of the State was upheld.

Yet, in spite of this indorsement of the principle of our Massachusetts laws, they are sometimes criticised by persons who do not understand their full force and the facts which lead up to them. As is usual in such cases, the criticisms are superficially plausible, but fail to get at the real meat of the case. These laws are in the interests of producers, consumers and dealers in dairy products. They were enacted to promote honest dealing, and have proved very effective. A mixture of tallow and lard undoubtedly contains — as has been alleged — almost as many units of fuel-food value as does butter. If sold honestly, the compound would be of service to the world, — though relatively it is less digestible than butter, for the reason that butter contains aromatic principles which enhance digestion, and melts at a lower temperature than does the above-named mixture. Butter is the only animal fat which nature furnishes for use as human food in its raw state. But the principal argument for these laws rests more on the need of suppressing commercial dishonesty than on questions of relative digestibility. Could mixtures of tallow and lard be sold for what they are, the health question would not be of great importance; but when these mixtures are sold with the color, form of package, style of advertising and nomenclature of the dairy, the transaction is tainted with deception; honest producers, dealers and also consumers are injured. Oftentimes the price asked depends upon the perfection of the imitation, which increases the injury to the consumer. When an article which could be sold at a good profit at 12 to 15 cents per pound is sold at 20 to 22 cents because it is a good imitation of a 25-cent article, the nature of the business is readily seen. The temptation

for more than an ordinary profit is at the root of much of the traffic in this article. The principles of this class of laws have been frequently reaffirmed during the past few years in trade-mark cases, in which the courts have invariably pronounced against deceptive imitations.

As evidence of the deceptive way in which these goods are sold, we have noticed in a newspaper published in Rhode Island, where there are no laws restricting the sale of oleo-margarine, an advertisement, in the shape of a reading notice, like the following: "Vermont butterine for sale in ten-pound tubs at Smith's." We submit to any impartial and fair-minded person that such is hardly a candid way of advertising a mixture of tallow and lard, compounded in the State of Rhode Island. In this connection we would call attention to a decision of the United States circuit court, southern district of New York, Aug. 6, 1898, in the case of *Collinsplat v. Finlayson*, in which the court said: "The false use of a geographical name will not be allowed in the federal courts, when it is used to promote unfair competition and induce the sale of spurious goods." The same session of the court decided that "when an article sold is inferior and spurious, and the package sufficiently resembles the complainant's to make it apparent that the design was to deceive the consuming public, an injunction will be granted."

STANDARD MILK.

As stated in the introduction, we have given more attention to enforcing the milk laws this year than ever before. We have introduced a feature which has enabled us to do thorough work, particularly when at some distance from a chemist, in hot weather. Our agents take a portable Babcock milk tester to the town in which they are going to work, and make a preliminary test of every sample which they take, passing everything which has 3.75 or 3 per cent of fat, as the statute may be 12 or 13 per cent of total solids. Milks having less than this amount of fat are reserved for full chemical analysis, and, as a large proportion of all milk is up to or above this figure, a comparatively small number of samples is submitted to chemical analysis.

Of the 30 cases that we have had in court this year, out of 901 samples taken, the following are the analyses : —

Fat.	Total Solids.	Fat.	Total Solids.	Fat.	Total Solids.
—	11.49	2.30	11.42	2.10	11.22
2.70	10.97	2.60	11.66	2.76	10.80
2.68	11.53	2.14	10.66	2.00	11.62
2.00	11.74	2.90	11.34	1.66	11.16
.69	2.45	2.86	11.36	.20	9.35
2.56	11.46	2.60	11.44	3.28	11.45
2.20	8.46	2.98	11.48	2.90	10.74
2.24	9.50	2.60	11.60	2.24	11.08
1.56	10.10	2.50	11.72	1.52	10.88
1.80	10.98	2.50	11.60	1.80	10.10
2.00	10.80	2.18	11.00		

These cases were from Malden, Springfield, Chelsea, Lawrence, Revere, Everett and Holyoke.

It will be seen that this list contains a record breaker for poor cases. We do not believe that in the history of milk adulteration a sample as low as 2.45 per cent of total solids has ever been found before; 9.35 is also very low. It will be noticed that the highest sample of milk on which a case was maintained contained 11.74 per cent of total solids, of which 2 per cent was fat. Although the total solids in this case were close to the standard, the fat was only two-thirds of the proper amount. In the sample testing 2.50 per cent of fat and 11.72 total solids the case was prosecuted because the defendant was under suspicion of adulterating whole milk with skim-milk. Though conviction was secured, the case was put on file by the judge without imposing a fine, because the milk was so near to the standard.

Many persons who are not familiar with court practice think that a law establishing a milk standard and providing for its enforcement operates like a delicate machine, adjusted to cut with accurate precision upon a certain line, in which a blade falls without a particle of variation, so as to sever everything outside the gauge to which the machine is set. This, however, is not the way that criminal laws are enforced. Not every man who staggers is brought into court for being drunk; the case must be sufficiently strong, and the violation of law of sufficient magnitude, to make it prob-

able that the judge or jury will be convinced beyond a reasonable doubt that the defendant is guilty. Consequently, in the prosecution of milk laws some latitude from the statute standard must be allowed, and milk that comes within from one-half to three-quarters of one per cent of the standard is usually passed as being all right. Those who argue against a 13 per cent standard as being too high should remember that, for purposes of enforcing the law, milk of 12.5 per cent solids will pass as standard milk, and that, were the standard reduced to 12 per cent, it would let in milk of 11.5 per cent. Now, as the average milk of average cows when mixed contains 13 per cent of total solids, is it for the interest of the majority of producers to admit competition with milk of a lower grade? We recognize the fact that a minority of cows produce milk of 10 and 11 per cent solids; and we admit that there is a seeming hardship in saying that the pure, wholesome product of a healthy animal should be declared unmerchantable. But that is not the case. If owners of cows producing low-grade milk came to the Legislature asking permission to sell such milk at a low price, it would be difficult to find arguments against the proposition; but these people ordinarily ask that their low-grade milk shall be considered as standard milk, and sold at the regular price. Milk below the standard can now be sold if it is labelled skim-milk. The can may, in addition, contain a guarantee that the milk is the pure, natural product of a healthy cow. But we cannot conceive of any reason why the producer of such milk should be allowed to compete with producers of better milk, or to sell 10 or 11 pounds of food to producers who cannot protect themselves, and assume that they are buying an average article, to wit, 13 pounds.

We also desire to emphasize a point which we believe is many times overlooked,—that the laws of Massachusetts have made two entirely separate and distinct offences: one is the selling of “adulterated milk,” the other is the sale of milk “not of standard quality.” Though the fines are the same for both offences, there is a certain amount of moral turpitude and popular stigma attached to the selling of an adulterated product, which does not necessarily attach to the sale of a product which may be pure, but which is not of

standard quality. Yet newspaper accounts of trials and in some cases official reports inadvertently allude to adulterated milk, when milk not of standard quality is meant.

Vermont, like Massachusetts, prohibits the sale of milk not of good standard quality. The Maine law prescribes that, when milk is found of less than the prescribed standard, "it shall be deemed *prima facie* evidence that said milk has been watered." New Hampshire has a similar law. The Rhode Island law provides that, when milk is found having less than a certain per cent of solids, "it shall be deemed, for the purposes of said sections, to be adulterated."

These milk laws are sometimes criticised on account of the danger under which the farmer and the peddler labor in carrying on their business, the charge being made that an unseen sword dangles over their heads, held by a thread, liable at any moment to fall upon them. This is an exaggerated statement of the case. There is very slight chance of any honest producer or dealer getting into trouble through selling honest milk of less than standard quality. Average mixed milk contains 13 per cent of milk solids, and the quality of herd milk is quite uniform. It is only a small minority of individual cows that produce milk of less than 13 per cent solids, and even the mixed milk from grades of these cows is usually very near to the standard. But during five months of the year the standard is 12 per cent instead of 13, so that during five-twelfths of the time the standard is one per cent below the average quality of milk. Further than that, the practical details in enforcing the milk laws, as we have said, allow a latitude of from one-half to three-fourths of one per cent. The chances of trouble are still further reduced by increasing knowledge of the science of milk production. The causes of variation in the quality of milk are better known than ever before. It is now well established that there are no great mysteries or sudden fluctuations in the quality of herd milk, that feed has comparatively little to do with it, and that almost everything depends upon the individuality of the animals. If the mixed milk of a herd is not of average quality, — a fact which is of very rare occurrence, — it is because there are too many animals in the herd which are producing milk of less than standard quality.

With the use of the Babcock milk tester the producer can keep track of the quality of the milk he is selling, and be absolutely sure of it. It is interesting to note that our enforcement of the law in Holyoke has led to the purchase of a number of these testers by milk dealers and others, who propose to keep thoroughly informed as to the quality of the milk which they sell.

PRESERVATIVES IN MILK.

During the past year formaldehyde in its commercial solution of formaline has come into use in the State as a preservative of milk. Dr. Henry Leffman, a member of the Society of Public Analysts of Philadelphia, in the report of the Pennsylvania department of agriculture, says: "Formaldehyde is one of the newest preservatives, and gives promise of being the preferred one. Formaldehyde has a decidedly germicidal action, and, in addition, possesses the power of rendering nitrogenous matters insoluble and more or less indigestible." The enforcement of the law in years past has been so vigilant as to drive boracic acid, salicylic acid and the older preservatives out of the market, and it has been somewhat rare to find milk adulterated with them; but the discovery of the germicidal properties of formaldehyde has led to the pushing of various preservatives having that as a basis. One of these has been advertised considerably in Massachusetts as "Freezine." The advertisement of it says:—

The souring of milk or cream is due to the action of minute organisms known as bacteria. We have been experimenting with these bacteria in our laboratory for years, and have been rewarded by discovering a gas which, when dissolved in a liquid, has the same effect on bacteria that freezing them does, and makes them harmless. This gas has no bad effects on milk or cream, in fact, a chemist could not find any trace of it if the milk were analyzed, because the gas evaporates after it has done its work. . . . The advantages which we claim for "Freezine" are: the manner in which it affects the bacteria and preserves the milk and cream; and that it cannot be detected when used, as it does not change or affect the appearance, color or taste of milk or cream. "Freezine" is perfectly harmless, and is not injurious to the human

system, as it freezes the bacteria and evaporates quickly, leaving the milk in a perfectly wholesome condition. It is much cheaper to use "Freezine" than ice.

An "Anti-Sour" has been sold in much the same way.

These statements are so plausible that some milkmen have been led into purchasing the article; but a chemist *can* detect it, and in every case where we have found it convictions have ensued, nine in all.

In one respect the advertisement tells the truth, and that is, in a clause in which the substance is recommended for cleaning, sweetening and purifying milk cans and bottles. The effect of formaline in destroying bacteria is such as to make it valuable for this purpose, and it is used to a considerable extent in cleansing creameries and cheese factories. It is stated that in parts of Europe formaline is used to remove danger of disease germs in rooms where milk is kept for the city trade. It is also used as a spray in cheese rooms, to prevent mold on cheese. But we cannot recommend it as an article of food. Whether it is an unsafe substance to take into the human stomach is not yet proven; that is, there is as yet no judicial evidence that any person has actually suffered any ill effects from using food preserved with formaline, although a report in a western paper of the trial of a milkman in Kansas City for using formaldehyde states that the compound is supposed to have caused the serious illness of several persons, and the city chemist testified that the substance was poisonous.

The consensus of the best opinion, however, has been and is against chemical preservatives; though boracic acid and other substances may be harmless in minute quantities, the general use of them is condemned. It is possible, however, that this ground will have to be re-argued, on account of the growing popularity of formaline.

Dr. J. A. Miller, one of the chemists of the New York department of agriculture, says:—

It is not at all improbable that the use of formaline, not alone for the preservation of milk, but of other food stuffs as well, will soon become a wide one; and it therefore seems to me to be a

wise and prudent plan to undertake a careful and thorough investigation of the effects of formaline upon animal economy.

But a food preservative like this should be presumed guilty till proved innocent. We should not take chances in dosing the human system ; what prevents bacterial action may impede digestion. Formaline is known to harden caseine ; why, then, is the caseine not rendered less digestible?

Henry H. Wing, assistant professor of dairy husbandry in Cornell University, in a treatise upon the nature and qualities of milk and its products, says : —

A large number of chemical agents are more or less destructive to germ life. Many of them are so violent in their action as to destroy the milk, as well as the germs ; but there are many which are destructive to germ life, with no effect upon the composition, odor or flavor of the milk. But all of these, without exception, are more or less injurious to the human system, particularly if they are used continuously, even though only in small quantities. Of the compounds which may be used for this purpose, formalin, salicylic and boracic acids and their derivatives are undoubtedly the least injurious, but their use is not to be recommended under any circumstances.

From “The principles of modern dairy practice from a bacteriological point of view,” by Gosta Grotenfelt, edited by F. W. Woll, assistant professor of agricultural chemistry, University of Wisconsin, we quote : —

The indiscriminate use of preservatives in food articles ought to be prohibited by law ; this is especially urgent in case of such articles as milk and other dairy products, which in a large measure enter into the nutrition of children and convalescents. Most European countries long ago prohibited the addition of salicylic and boracic acid and other antiseptics in food, *e.g.*, Germany, Holland, France, Austria, Spain, Italy, etc. Mr. Hehner, the president of the Society of Public Analysts of England, in the November, 1890, meeting of the society, read a paper on food preservatives, in which he forcibly sums up the question in the following paragraph : —

“We should work for the entire prohibition of all kinds of preservatives. It is time that we went back to natural food. I object to being physicked indiscriminately by persons not qualified to administer medicine whilst I am in health. I object still

more when I am ill. I object still more strongly to have my children physicked in their milk or their bread and butter. It is no consolation to me to know that the physic is not immediately fatal or not even violently injurious. The practice is utterly unjustifiable, except from the point of view of a dealer who wants to make an extra profit, who wants to palm off a stale or ill-prepared article upon the public."

C. M. Aikman, M.A., D.Sc., in a book on milk, its nature and composition, says, as to means of preventing changes in milk:—

The great agent is heat. Cleanliness is not a less valuable instrument, cleanliness in every way, — on the hands of the milker, on the teats of the cow, in the milk pails and other receptacles used for holding the milk, in the byre, etc. Immediately after milking the milk should be cooled down; the lower the temperature, the better. On the other hand, it may be sterilized by heating. The addition of chemicals, so-called "preservatives," cannot be too strongly condemned. Even such comparatively harmless preservatives as bicarbonate of soda, boracic acid, salicylic acid and peroxide of hydrogen ought not to be used. Quite recently, also, formalin, viz., a 40 per cent solution of formaldehyde, has been used with great success as a preservative.

Dr. A. McGill, Bulletin 54, laboratory of the inland revenue department of Ottawa, says:—

It is true that we do not yet know enough of the physiological action of formalin, salicylic acid, borax, etc., to enable us to say just in what way and to what extent their presence in food is harmful or dangerous; but it is not unreasonable to suppose that substances so effective in preventing putrefactive change should interfere more or less with the functions of digestion, which are more or less analogous to such change. As the subject is a highly important one, I shall take the liberty of quoting a few opinions by leading English physicians, called out by a circular recently addressed to the profession by the editor of the London "Lancet" (see "Lancet," 1897, page 56):—

Sir Henry Thompson writes that he has long held the addition of antiseptics to food as undesirable, though he is unable to produce evidence that any one of them had given rise to deleterious action.

Dr. Pavy wrote that he did not consider our knowledge sufficiently extended to permit of it being taken for granted that no

injury is producible, although there is no evidence of injury to health. He points out that it is the vendor, and not the consumer, that is benefited.

Dr. F. J. Allen points out the possibility of daily accumulation of antiseptics quite sufficient to produce a gradual lowering of the standard of health.

Dr. Sims Woodhead draws attention to idiosyncrasy and cumulative effect, and dwells upon our ignorance of the action of certain drugs (*e.g.*, formalin) on food stuffs. He points out that, by the use of preservatives, foods of inferior quality may be doctored. He would make the use of antiseptics illegal, unless their nature and quantity be made known.

It is not to be forgotten that, while some disagreement as to the positively harmful effects of antiseptics when used by adults may be found among physicians, the presence of these powerful drugs in the food of infants admits of no justification.

RENOVATED BUTTER.

We have several times called attention to the increasing sale and use of butter which has been renovated by various processes and sold in a wholesale way as “process butter” or “sterilized butter.” The managers of these renovating establishments buy up stale, rancid, unmerchantable and low-grade butters, of various degrees of badness. These are melted together and clarified. The oil is then chilled and the granules re churned with milk or cream. The resultant product has many of the physical characteristics of oleomargarine, and may be mistaken for it by some of the ordinary tests. Chemical analysis shows that the substance has an amount of volatile fatty acids below the ordinary average for butter, but much more than oleomargarine contains. We have taken several samples brought to us during the past year, and Dr. B. F. Davenport reported that the article could be properly called “an oleomargarine,” and that “it is not the product ordinarily known as butter.” This process butter is frequently sold dishonestly, and often the consumer is ignorant of its real character, and that raw material unfit for human food may have entered into its composition. Pennsylvania requires it to be branded and labelled as “renovated butter.” This is an honest name, and we can see no objection to it. A New York butter

dealer says: “ ‘Renovated’ butter sounds hard, and it would have a killing effect on the trade in this State. But that is just what it is, and I see no reason why it should not be branded that way. It is a legitimate article, all the component parts except the salt and the coloring matter being the product of the dairy; but, in the interest of all concerned, the goods must be sold for what they are.”

It is this selling of them for what they are not that deceives, the consumer usually thinking that what he buys is fresh creamery butter. This deceptive business also injures the butter trade, for a dishonest dealer can undersell honest goods 2 or 3 cents per pound, and yet make more than the ordinary per cent of profit. These facts are causing an increasing agitation of the policy and principle involved in renovated butter, and a growing feeling in favor of the necessity of branding it.

BUTTER.

Massachusetts consumes much more butter than is manufactured in the State. The statistics of all the consumption cannot be readily secured, but the following table gives the Boston chamber of commerce figures for the receipts and sales in this one market:—

	1898. Pounds.	1897. Pounds.	1896. Pounds.
On hand January 1, . . .	2,473,600	2,898,000	1,659,434
Receipts for the year, . . .	50,609,552	51,107,033	50,972,255
Total supply, . . .	53,083,152	54,005,033	52,631,689
Exports, deduct . . .	1,574,682	3,286,333	3,156,741
Net supply, . . .	51,508,470	50,718,700	49,474,948
Stock on hand, December 31, deduct, . . .	2,829,160	2,620,680	2,898,080
Consumption, . . .	48,679,310	48,098,020	46,576,868

This shows a reduction in receipts for 1898, occasioned by a great falling off in the export business. But the consumption is steadily increasing.

The amount which has been consumed is materially larger than it would have been had imitation butter been allowed full and free sale in a deceptive manner. On the very moderate estimate of curtailing dishonest sales to the amount of one-half of one per cent of the amount consumed, which no one will dispute, the law has prevented imposition and enhanced honest dealing to the extent of 243,400 pounds, which, at the average price of 20 cents per pound, amounts to \$46,680. This is based on the Boston market alone.

The following table shows the extreme quotation for the best fresh creamery butter in a strictly wholesale way in the Boston market for four years: —

	1898. Cents.	1897. Cents.	1896. Cents.	1895. Cents.
January,	22½	22	26	26
February,	21½	22	24	25
March,	22	23	24	23
April,	22½	22	22	21
May,	18	18	17	19
June,	17½	16	16½	20
July,	18½	16½	16½	19
August,	19½	19	17½	21
September,	21	22	17½	22
October,	21½	22½	20	23
November,	21	22	21	23
December,	21	23	23	28

The price for 1898 averaged about $\frac{1}{8}$ of a cent per pound less than for 1897 and $\frac{1}{10}$ of a cent per pound more than for 1896. But during the months of greatest depression — June and July — the price in 1898 did not drop so low by $1\frac{1}{2}$ and 2 cents per pound as in 1897. Prices in 1898 were better than in 1897 up to September; but for the last four months of 1898 there was a marked falling off, as compared

with 1897. The highest price quoted in four years is 28 cents, in December, 1895; the lowest is 16 cents, in June, 1897.

BOSTON MILK.

The following table gives the receipts, sales and surplus of railroad milk in 8½ quart cans, brought into the greater Boston, as reported by the contractors' association:—

1898.	Received.	Sold.	Surplus.
January,	947,935	708,677	239,258
February,	835,916	635,892	200,024
March,	960,443	728,188	232,255
April,	965,260	690,042	275,218
May,	1,083,969	725,507	358,462
June,	1,142,161	711,104	431,057
July,	995,552	748,414	247,138
August,	893,927	736,426	157,501
September,	895,794	729,885	165,909
October,	928,309	737,652	190,657
November,	818,027	704,130	113,897
December,	850,468	708,765	141,703
	11,317,761	8,564,682	2,753,079

	Receipts.	Sales.	Surplus.
1897,	11,798,191	8,738,572	3,059,619
1896,	10,772,108	8,087,378	2,684,730
1895,	9,856,500	8,040,732	1,815,768
1894,	9,705,447	7,657,421	2,048,026
1893,	9,263,487	7,619,722	1,643,765
1892,	9,212,667	7,315,135	—

The noticeable feature of the business the past year was the immense surplus in June, followed by a marked falling off in receipts during the last half of the year. In round figures this decrease from receipts during the corresponding months of 1897 was as follows:—

July,	.	.	.	.	.	.	.	.	18,000
August,	.	.	.	.	.	.	.	.	73,000
September,	.	.	.	.	.	.	.	.	61,000
October,	.	.	.	.	.	.	.	.	109,000
November,	.	.	.	.	.	.	.	.	144,000
December,	.	.	.	.	.	.	.	.	95,000
									<hr/> 500,000

This falling off is probably due to several causes. The increased surplus in April, May and June reduced the average income per can to producers; this, coupled with higher prices of cows, has undoubtedly been largely instrumental in leading to reduced production. Sales in 1898 have fluctuated more than the sales in 1897. In August there was an increase of 16,000 cans, and in April a decrease of 43,000. Every month has shown a decrease except January, March and August. It is hardly supposable that the consumption of milk in a growing municipality has fallen off. The presumption is that this falling off of the contractors' sales has been partly made up by the increased use of cream and partly by an increase of milk from near-by sources. This milk has for several years been a cause of some anxiety, as well as demoralization, though no more so this year than usual. Reduced supplies have offset this and steadied the market, so that the close of the year finds it in better condition than for some time. The extreme retail price of milk has continued, as heretofore, at 7 cents per quart where milk is delivered to customers in quart or pint cans. Much is sold from grocery stores at 4 and 6 cents. In sales in a jobbing way by the can to hotels, restaurants, public institutions, etc., the competition has been sharp, and many stories have been told of extremely low prices. The nominal price to peddlers has been 30 cents in summer and 33 cents in winter. The movement to supply a higher grade of milk at a higher price makes headway slowly, though each year

notices a little gain in that respect. Much of the near-by milk should be held at the full price or a little more, on account of its greater freshness, instead of being offered in competition with railroad milk at a lower price.

The price of milk to the producers has been the same as for previous years. As has been explained in previous reports, the price of milk is based upon a theoretical Boston price, subject to a scale of discount depending upon the distance from Boston as follows:—

	Cents.
For stations between 17 and 23 miles from Boston,	8
For stations between 23 and 36 miles from Boston,	9
For stations between 36 and 56 miles from Boston,	10
For stations between 56 and 76 miles from Boston,	11
And 1 cent more for each additional 20 miles.	

When this plan was first established, the theoretical Boston price was expected to be the selling price of wholesalers to peddlers, and the discount was supposed to represent the expenses of doing business and the profit of the wholesalers. During the past few years of smaller margins milk has not been sold at the theoretical Boston price into 2 or 3 cents per can, consequently this figure has been to an extent misleading. During the past year the discount scale has been reduced 2 cents.

The theoretical Boston price per can of $8\frac{1}{2}$ quarts for a number of years has been as follows:—

YEAR.	Summer.	Winter.	YEAR.	Summer.	Winter.
	Cents.	Cents.		Cents.	Cents.
1886,	30	36	1893,	33	37
1887,	30	36	1894,	33	37
1888,	32	38	1895,	33	37
1889,	32	38	1896,	33	35
1890,	32	36	1897,	33	35
1891,	33	37	Average (12 yrs.),	$32\frac{1}{4}$	$36\frac{3}{8}$
1892,	33	37			

During the year 1898 the price has been 31 and 33 cents, — 2 cents reduction from the figures of the previous two years, but netting the farmers the same on account of the reduced discount.

Early in the year there was a contest between contractors and producers as to the amount of surplus for which the contractors should pay full price. The producers asked the full price on an amount of the surplus equal to 5 per cent of the sales; the offer was on an amount equal to $2\frac{1}{2}$ per cent of the sales. A proposition to refer the difference to the board of arbitration fell through, owing to a misunderstanding.

There has been undertaken during the past season what may prove an entering wedge to a material improvement of the city milk supply. One large firm of milk wholesalers, compelled to move its business by changes in railroad tracks incidental to the new union station, has built a new milk depot. It is constructed of brick, iron, cement and artificial stone, so that it can be kept scrupulously clean. The milk will be cooled by artificial refrigeration, instead of ice, which is more cleanly. But the distinctive feature of the building is the possibility of a radical change for the better in the method of distributing milk. Now the peddlers take the $8\frac{1}{2}$ quart cans from the cars to their individual milk headquarters, which are not always over clean, and which sometimes are in unpleasant proximity to stables, sewers, etc. Here the milk is mixed, put in small retail cans, kept in refrigerators over night, and delivered the next morning.

This new wholesale milk house is to be fitted with porcelain-lined vats, where the milk will be mixed and cooled. It can then be drawn into cans or bottles for consumers, kept in cold storage at known and uniform temperature till needed, and sold to peddlers under a guarantee of quality, for immediate distribution. This plan also has the possibility of keeping away from the city trade all cans used in the transportation of milk, making possible the return of clean cans to the farmers.

A scrap going the rounds of the dairy papers draws a somewhat fanciful view of the future condition of the city milk trade. It says: —

The creameries, milk rooms, vats, etc., will be either of tile or porcelain lining; apparatus for sterilizing and pasteurizing milk will have to be purchased; all milk will be certified, and nothing sold except in glass jars; every concern will employ a graduated chemist and a veterinary surgeon. Milk stores will be veritable crystal palaces, compared with the ones in use to-day, and all the employees will be uniformed, and compelled to undergo a civil service examination once a year. More advance will be made on this line in the next ten years than has been made in the past fifty years. A complete revolution is coming. Almost the same progress will be made on the dairy farms among the men who produce the milk. The production, care and handling of milk is receiving more attention to-day from all classes than ever before in our history.

The above paragraph was written and published without any knowledge of the new building in this city; but it may be that Boston will be able to show the world substantial progress along the lines indicated in the above paragraph much sooner than the writer of it anticipated.

Early in the year a study of the condition of cans returned to the farmers was undertaken, in connection with the Milk Producers' Union. Shipping tags were provided for the members of the union, and a circular sent them, announcing that all cans received by them in an unduly filthy condition could be sent by express to the executive officer of the Dairy Bureau for inspection and report. This brought out only 20 cans in three months. The number was much less than we had supposed would be sent, but the nauseating filthiness of those which were returned made up for lack of number, — rotten curd, putrefying slime, rotten eggs, kerosene oil and human excrement were among the ingredients, while the odors beggared description.

OUTSIDE OF BOSTON.

In the other cities and in the larger towns the milk supply has in the main been large, and prices weak during the year. In Boston the peculiarity of the wholesale system is such that the wholesalers keep the surplus milk off the market, manufacturing it into butter. This has a great influence in steadying the retail market, and in reducing to the lowest

terms the temptation to make concessions in prices. Such conditions do not exist outside of Boston, and from nearly every considerable town or city have come complaints of much cutting of prices, though nominally the prevailing price throughout the Commonwealth seems to be 5 and 6 cents. Lynn, Newton and one or two other places report 7 cents as an extreme for ordinary milk. In some places the under-bidding is done by means of a ticket system, tickets good for 22 or 24 quarts being sold for \$1.

Though the supply has been full, all reports received indicate a fair demand. There is no great movement in the State towards selling a superior article at a better price than the average, or in selling certified or guaranteed milk, but reports from a number of places show a tendency in that way. The use of glass bottles is increasing, and this has an indirect tendency to improve the supply. A correspondent from Worcester says there is a growing tendency to improve the quality of milk by the introduction of Jersey cows. In Newton and Brookline there is a growing trade in milk produced from well-known herds of better than the average quality, at 8 and in some cases 10 cents per quart. The milk inspector in Holyoke says there has been a marked improvement in the quality of milk sold in that place. From Lowell, Framingham and one or two other places come reports of the introduction of pasteurized milk, but that is not as yet in general use. The Newton milk inspector reports that, of nearly 2,000 samples examined by him, the greater number were of higher standard than required by law.

INSPECTION.

We have previously recommended a system of inspection of dairy herds and surroundings, based on the Michigan law. This furnishes an educational system which can be of great service, with a minimum of objectionable features. The plan calls for only an inspection of herds and stables, and a report. A good report is a good advertisement to a thrifty, intelligent dairyman; a poor report is a stimulus to better conditions. We are informed by the Michigan dairy commissioner that the plan works admirably there. Its general

features have been endorsed and recommended by the Massachusetts State Grange. We append two sample reports from a Michigan report:—

At Ionia.

A. M. Welch.—Cows in very good condition; stables exceptionally clean; ventilation good; sanitary conditions excellent; uses spring water; drainage good. Cows are cleaned twice a day; wells and ceilings of stables whitewashed twice each year; has clean, well-ventilated cooling room, and all modern appliances for handling milk in a neat and systematic way.

At Cadillac.

C. J. Holman.—Stables unclean; drainage imperfect and manure allowed to accumulate near stables; ventilation fair; sanitary conditions poor.

CREAM. — CONDENSED MILK.

Sales of cream continue to increase, and, as much of the market cream is manufactured on the factory plan in large creameries of good standing, the quality is to a great degree uniform and satisfactory. As the cream is sold to the trade in small cans, the opportunity to tamper with it is largely removed. It would be an advance step for the cans to have a label containing a guarantee of quality. This would be no hardship to these creameries or other leading producers, for the cream is now of good quality, but it would educate consumers to differences in the quality of cream and to the relation between varying qualities and price; it would also reduce any tendency for less scrupulous dealers to sell a lower grade at the regular price.

A Philadelphia newspaper says:—

Probably no recent development of the retail grocery business has been more noticeable of late years, especially in the mill and labor districts, than the increase in the sale of condensed milk. Grocers who formerly sold none of this now sell stacks of it, and grocers who used to sell a few cans a month now sell several cases. Every condensed milk manufactory in the country has increased its output 25 per cent this year, and it is sold up to the handle.

Condensed milk is of more varying composition than market cream, and in many cases the percentage of fat is not increased by the condensation process in the same ratio as the solids not fat are increased. Condensed milk should mean milk which has been thickened by driving off the water. If any of the fat has been removed, that should be stated. When condensed milk is artificially sweetened, that fact should also be stated on the label. Usage has led the consumer to expect condensed milk to be sweetened. There is no need to add sugar to preserve condensed milk. Some good brands contain no sugar. When condensed milk is sugared, the consumer can add five to eight volumes of water, and still have a product which does not appear over thin.

EDUCATIONAL.

The educational part of our work has not been neglected. The acting executive officer has answered twenty-five calls to address various gatherings. He has also been called upon several times to test milk at dairies with the Babcock tester. He has also made tests of milk and cream brought to him. During the summer offers were made to the New England Milk Producers' Union and to the Massachusetts Creameries Association to hold a series of combination dairy institutes with each organization. The offers were gratefully received. As a result, four profitable, well-attended creamery institutes were held at Granby, Enfield, Cummington and Easthampton, in co-operation with the creameries' association. The institutes afforded an opportunity to the farmers who produce cream to meet practical buttermakers and Dr. J. B. Lindsey. Here the actual problems which perplex them were talked over, much interest aroused, and we believe considerable good done.

The representative of the Bureau has acted as expert judge at the exhibition of the Worcester South Agricultural Society, to award prizes for the cow producing the greatest amount of butter fat in twenty-four hours on the society's grounds. The testing was done with the Babcock tester in the exhibition hall, before all who wished to witness it, with the following result: —

High-grade Guernsey (C. L. UNDERWOOD, East Brookfield, Mass.).

	Weight of Milk.		Per Cent of Fat.	Weight of Fat.
	lbs.	oz.		lbs.
Night,	17	14	4.00	.715
Morning,	17	9	3.80	.667
Total,	35	7	—	1.382

High-grade Ayrshire, Nine Years Old, Two Months in Milk (L. WOODIS, North Brookfield, Mass.).

	lbs.	oz.		lbs.
Night,	15	10	3.60	.562
Morning,	15	8	4.20	.651
Total,	31	2	—	1.213

Grade Jersey, Ten Years Old (MELVIN SHEPARD, Sturbridge, Mass.).

	lbs.	oz.		lbs.
Night,	10	0	5.40	.540
Morning,	9	8	5.80	.551
Total,	19	8	—	1.091

Jersey (BOND & SONS, Charlton, Mass.).

	lbs.	oz.		lbs.
Night,	9	8	6.40	.608
Morning,	8	11	4.00	.347
Total,	18	3	—	.955

Jersey, Four Years Old, Ten Days in Milk (C. D. RICHARDSON, West Brookfield, Mass.).

	lbs.	oz.		lbs.
Night,	8	3	5.80	.475
Morning,	8	2	5.80	.471
Total,	16	5	—	.946

Thoroughbred Jersey, Ten Years Old, Four Months in Milk (JAMES FREELAND, Sutton, Mass.).

	Weight of Milk.		Per Cent of Fat.	Weight of Fat.
	lbs.	oz.		lbs.
Night,	9	6	4.80	.450
Morning,	9	2	5.00	.456
Total,	18	8	—	.906

This educational work is sometimes discouraging, on account of the failure to see immediate results. It is often like the seed put away out of sight. But we believe that a harvest of increased intelligence and profit is inevitable, though in the future.

The duty of representing the State at the National Convention of Dairy and Food Commissioners has also fallen upon me. These conferences of persons engaged in similar work are very valuable, tending to promote efficiency of action.

The following is the manner in which the appropriation of \$7,000 has been expended:—

Members of the Bureau, travelling expenses and attending meetings,	\$382 47
Agents' salaries,	2,112 00
Agents' expenses,	2,063 99
Chemist,	810 00
George M. Whitaker, travelling and office expenses, supplies, mileage tickets, etc.,	827 93
Educational work,	106 50
Printing,	45 16
Supplies,	41 30
Total,	\$6,389 35
Unexpended,	610 65
	\$7,000 00

GEORGE M. WHITAKER.

Accepted and adopted as the report of the Dairy Bureau.

D. A. HORTON.
J. L. ELLSWORTH.
C. D. RICHARDSON.

113a
1899

B

PUBLIC DOCUMENT No. 60.

NINTH ANNUAL REPORT

OF THE

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED

UNDER CHAPTER 412, ACTS OF 1891.

JANUARY 15, 1900.

BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,

18 POST OFFICE SQUARE.

1900.

NINTH ANNUAL REPORT

OF THE

Mass:

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED

UNDER CHAPTER 412, ACTS OF 1891.

JANUARY 15, 1900.

BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,

18 POST OFFICE SQUARE.

1900.

61A.32MS

II 13 n

1899

B

DAIRY BUREAU—1899-1900.

D. A. HORTON, NORTHAMPTON, *Chairman.*

J. L. ELLSWORTH, WORCESTER.

C. D. RICHARDSON, WEST BROOKFIELD.

Executive Officer.

J. W. STOCKWELL, *Secretary of the State Board of Agriculture.*

Assistant to the Secretary and Acting Executive Officer, appointed by the Governor.

GEO. M. WHITAKER, BOSTON.

REPORT.

The Dairy Bureau is charged with the enforcement of the dairy laws of the Commonwealth, and also with educational work. In enforcing these laws the Bureau has co-ordinate jurisdiction with the State Board of Health and with milk inspectors, and at first glance it would seem as if there were an unnecessary complexity of machinery; but this is apparent rather than real. So far as the State Board of Health concerns itself with dairy products, it makes a specialty of looking for violations of the milk laws; consequently, the Dairy Bureau makes a specialty of enforcing the counterfeit butter laws. In most cities and towns having milk inspectors the salaries paid these officers are very small, hence no great amount of work is performed by them, and there is need of inspection by State officers; in these places we are welcomed, sometimes very heartily, as an important ally of the local authorities. Boston, however, has liberal appropriations, and in Dr. Harrington an excellent officer to enforce the law; therefore the work is well done, and we attempt nothing in the city of Boston. From the above it will be seen that, in enforcing the laws relative to counterfeit butter outside of Boston, with incidental attention to other dairy laws, and in carrying out the injunction of the statute "to disseminate such information as shall be of service in producing a more uniform dairy product of higher grade and better quality," the Dairy Bureau has a distinctive field of action different from that of any other department, and one in which there is an abundance of important work.

During the past year we have been exceptionally busy, and have accomplished more — at least, so far as visible and statistical results show — than in any previous year of the Bureau's existence. This is largely due to increased activity of dealers in oleomargarine, and the addition to our work

by the passage of the renovated butter law last winter. We have made more than the average number of inspections, taken more samples than in previous years, had more than the average number of cases in court, secured more convictions than ever before, and have done an unusual amount of educational work. This has necessarily increased our expenses for travel and chemist's services, but the expense for agents' salaries has been below the average. Notwithstanding all that has been accomplished, we have seen much more that could be done which we were obliged to leave untouched, on account of the limited appropriation. With more money we could have shown even greater results.

The membership of the Bureau has remained the same as last year. There has been a change, however, in the executive officer, due to the retirement of Hon. William R. Sessions, who declined another re-election as secretary of the Board of Agriculture. Hon. J. W. Stockwell was elected in January, and in July assumed the office, which includes the position of executive officer of the Bureau. The details of the executive work have continued under the direction of George M. Whitaker, who in September was reappointed by the Governor as "assistant to the secretary of the Board of Agriculture . . . to assist in the work prescribed in the eleventh section of this act."

Only two regular agents for collecting samples and for inspection service have been at work during the year. Mr. Stockwell resigned in January, and Ralph M. Horton was then employed as a regular agent. George F. Baldwin has been continued during the year. Prof. F. S. Cooley of the Agricultural College was appointed in the summer as a temporary agent to investigate the work of the creameries of the State. From time to time special agents have been employed for short terms, as circumstances seemed to demand. The regular agents become in time so well known that their efficiency for detective work is in some instances impaired, and good results occasionally follow the temporary employment of a person unknown to would-be law breakers.

The chemical work during the year has been performed by Dr. B. F. Davenport and by the Hatch Experiment Station (Edward B. Holland, analyst), the former analyzing

samples taken in the eastern part of the State, and the latter samples taken in the western part of the State.

In a general way and statistically the work of the Bureau during the year has been as follows:—

Inspection of places in which dairy products or imitation dairy products were sold or stored,	1,935
Samples taken of real or imitation butter,	742
Samples taken of milk,	611
Samples taken of condensed milk,	102
Samples taken of cream,	4
Cases in court,	87
Meetings addressed, including a butter exhibition,	19
Inspection of creameries.	
Work at fairs.	

The offences charged in the court cases have been as follows:—

Having milk of less than standard quality in possession with intent to sell,	19
Having imitation of yellow butter in possession with intent to sell,	47
Serving oleomargarine in hotels and restaurants without giving notice,	13
Obstructing officers in prosecution of their work,	3
Condensed milk,	5
Total,	87

This does not include all of the work done, as evidence has been secured of several violations of the law which could not be tried during the year, and necessarily went over to the next year's record. Evidence in two other cases which could not be tried on account of the absconding of the defendants was secured.

Of the above 87 cases in court, the defendant was acquitted in 10 and a *nol pros.* entered in 7, leaving the largest number of convictions secured by the Bureau in any one year.

A more detailed account of the work is as follows:—

IMITATION BUTTER.

Natural butter has been higher in price during the past year than for a number of previous years, which has been a temptation to crowd the sales of the spurious article. Fur-

ther than that, the number of manufacturers who have been pushing their goods in Massachusetts has increased. When the national supreme court rendered its now famous Plumley decision, sustaining the constitutionality of the anti-color law, the large Chicago manufacturers withdrew from Massachusetts. They said that, whatever might be their opinion of the law, they could not afford to stand before the community as law breakers. As a result of this decision, all of the counterfeit butter that came into Massachusetts for several years was made in Rhode Island, by companies bearing the names — somewhat peculiar for the business in which they were engaged — of “Vermont” and “Oakdale.” During the past year the greed of gain has led two large Chicago manufacturers to climb sheepishly down from the pedestal of virtue on which they had been posing, and enter the scramble for dollars by defying the laws of the Commonwealth. These large manufacturers have made cities and towns in other States near the Massachusetts line the base of their operations, and in many instances have resorted to tricks that would bring a blush of envy to the average kitchen bar room proprietor.

On these accounts we have had no lack of work. Our agents have travelled more miles, made more inspections and procured more evidence than in any previous year.

We have had 63 cases in court. Evidence has also been secured in a number of others which it was impossible to try in time to go into the year's records. The charges were as follows: —

Violating the anti-color law,	47
Violating the hotel-restaurant law,	13
Obstructing an officer,	3
Total,	<hr/> 63

It will be noticed that only two forms of complaint have been used. Some years we have brought charges for violating as many as eight different laws, but in every case the anti-color law was one of the number which was violated. As courts do not like to multiply cases based on a single transaction, and as violation of the anti-color law is easily proved, we have adopted the practice of making all complaints for the

violation of that law, except when oleomargarine is served in hotels and restaurants without giving notice.

In the above 60 oleomargarine cases, 2 were *not prossed* and there were 5 acquittals, leaving convictions in 55 cases, as against 16 in 1898 and 21 in 1897. No cases appealed to the superior court have been lost. Exceptions have been saved for the supreme court on three points. In a majority of cases where the anti-color law was violated the oleomargarine was sold as and for butter, so that there was a commercial and moral fraud, as well as a violation of the statute. In one case we found the marks and brands required by the national government erased from the tub, and in place thereof the stencil "From J. D. Smith's Creamery, Sudbury, Vermont." An inspector was sent to Sudbury to investigate, and found no such creamery in the place.

Though the sale of oleomargarine has been pushed harder than ever before in the State, the law has been enforced with such efficiency that the veteran market reporter of one of the leading daily papers of Boston, who is remarkably well informed, in summing up the situation says: "Although oleomargarine seems to be interfering considerably with the consumption of genuine butter in the west, we do not think it cuts much of a figure here."

In a number of instances our agents have found shipments of oleomargarine in transit, and following it to the place of delivery have traced it to some State institution, in one case to a soldiers' home. Thus in many instances the State is holding out temptation to law breakers, and giving a counterfeit article to the unfortunate inmates of our eleemosynary institutions, not excepting the veterans who risked their lives in the defence of their country.

Dr. Harrington, the Boston milk inspector, for several months prosecuted restaurant keepers for the sale of an imitation of yellow butter; but after awhile he ran against a snag in the person of a judge who held that complaints ought not to be brought under that act, because restaurant keepers are especially mentioned in another, and discharged the defendant. Acting on what he believed to be good advice, the inspector entered more cases under slightly different pleadings, got convictions, and the defendants appealed to

the superior court. One case was called in May, and the judge, on consultation with counsel on both sides and such of his associates as could be seen, decided that furnishing yellow oleomargarine to be used on bread as a part of a meal does not constitute a sale of the oleomargarine in the same sense that furnishing milk as a part of a meal constitutes a sale of milk. The minimum fine in the restaurant cases is only \$10, while in the other class of cases it is \$100.

We yet hear occasional criticisms of the anti-color law, especially by persons who have not had opportunity to investigate it; and the remark is sometimes made that, if butter can be colored, there is no good reason why oleomargarine cannot be sold in imitation of butter. This is sophistical. Admitting; for argument's sake, that coloring butter is indefensible, it does not make right the selling of a counterfeit. As has been frequently explained in previous reports, the law is demanded in the interests of commercial honesty. Colored oleomargarine is a fraudulent article; when sold, it is usually sold dishonestly, and not only sold dishonestly, but at an exorbitant profit. Experience has proved this. In instances where we have found it on sale, where people had taken their chances in violating the law, we have found the retailer getting a profit of 60 or 70 per cent, to say nothing of the swindle of palming off lard and tallow on persons who supposed they were getting real butter. Such cases would be multiplied enormously and indefinitely, were it not for this law. Hence the law is in the interests of consumer, producer and dealer in honest butter.

During the year an attempt has been made in a number of States to create a sentiment in favor of increasing the national revenue tax on colored oleomargarine, in order still further to throttle a counterfeit. It has been shown that this might endanger the constitutionality of the anti-color law by recognizing colored oleomargarine as an article of commerce, should the supreme court follow the logic of the recent Pennsylvania case. In view of this fact, an effort is to be made first to secure a law in relation to food products similar to what has already been enacted in relation to intoxicating liquors, — to wit, that food products, especially dairy articles, shall be subject to the laws of the States into which they are imported. This will clinch the question of constitutionality.

Then can follow an increase in the tax on colored oleomargarine, which will not jeopardize any legislation which has been already secured.

There have been no court decisions during the past year of particular importance. In Michigan the anti-color law has been temporarily defeated on a technical ground, the claim being that the subject of the statute was not indicated with sufficient clearness in the title.

RENOVATED BUTTER.

The process of gathering up low grades and refuse butter, and so renovating the mass as to produce a clean, palatable article, is in the abstract a gain to humanity, as is any process that economizes wastes, utilizes by-products and perfects or increases the world's food supply; but when avarice impels weak mankind to sell the product dishonestly, when this clarified stuff is in many cases given to the consumer as fresh creamery butter, law is necessary to protect consumer, honest dealer and the better class of producers. Such a state of affairs existed in Pennsylvania, New York, Minnesota and Massachusetts last winter, to such an extent as to lead to the enactment of laws requiring that packages and wrappers used in the sale of this grade of butter should be marked with the words "Renovated Butter." This condition of affairs and this law has added to our work and expenses, especially for chemists' analyses; but we cannot report any absolute statistics on this point, because the work is closely related to the enforcement of the oleomargarine laws. When an inspector visits a store, he is on the lookout for both oleomargarine and renovated butter. Still further, they are often so near alike in superficial characteristics that he recognizes what he finds as something that is not natural butter, and takes a sample, a chemical analysis being necessary to detect the nature of the substance.

During the year we have found no wilful violations of the law. Where the goods have been found unmarked, attention has been called to the fact, and in every instance so far there has seemingly been a willingness to comply with the law; hence there have been no prosecutions. In a few instances there has appeared an attempt to evade the law by having the mark or brand less distinct than the law required.

One dealer used wrappers marked “Sterilized Renovated Butter.”

It goes without saying that the law is unpopular with would-be or actual dealers in this kind of butter. This unpopularity has been increased this season by the high price of butter, which has stimulated the demand for the lower grades, and, as one market reporter says, has proved “a bonanza for dealers in renovated butter.” Why a bonanza, unless because they were selling at abnormal profits, and inferentially dishonestly? The objection is to the word “renovated,” which is said to carry a stigma, and to be a derogatory expression which injures the sale of this butter. Dealers prefer the word “sterilized;” but “renovated” is an honest appellation, while “sterilized” is not.

BUTTER.

The following table shows the extreme quotation for the best fresh creamery butter in a strictly wholesale way in the Boston market for five years:—

	1899. Cents.	1898. Cents.	1897. Cents.	1896. Cents.	1895. Cents.
January,	21	22½	22	26	26
February,	24	21½	22	24	25
March,	22½	22	23	24	23
April,	21	22½	22	22	21
May,	19	18	18	17	19
June,	19	17½	16	16½	20
July,	19	18½	16½	16½	19
August,	21½	19½	19	17½	21
September,	23½	21	22	17½	22
October,	24	21½	22½	20	23
November,	26½	21	22	21	23
December,	28	21	23	23	28
Average,	22.4	20.5	20.6	20.4	22.5

While the price during some months was below the average for corresponding months, the average for the year 1899 was about two cents per pound more than the average of 1896, 1897 and 1898. The advance was most marked during the last five months of the year.

The amount of business done in Boston for the years 1899 and 1898 was as follows: —

	1899. Pounds.	1898. Pounds.
On hand January 1,	2,829,160	2,474,000
Receipts for year,	49,457,606	50,609,552
Total supply,	52,286,766	53,083,552
Exports, deduct	2,951,710	1,574,682
Net supply,	49,335,056	51,508,870
Stock December 31, deduct	2,035,400	2,829,160
Consumption,	47,299,656	48,679,710

The average monthly consumption for three years has been as follows: —

	Pounds.
1899,	3,933,300
1898,	4,056,600
1897,	4,021,500

It is unfortunate that statistics for other cities are not available; but in no other place in the State is there any organized body which looks after the statistics of business so carefully as the Boston Chamber of Commerce.

If the existence of the oleomargarine laws and the way that they are enforced has driven out of the business a dishonest substitute and increased sales of genuine butter by an amount equal to one per cent of the consumption reported above for Boston alone, we have the value of the law to consumers, producers and dealers, expressed in pounds, as 470,000. This we believe to be an extremely conservative estimate. We base our opinion on the temptation there is to sell colored oleomargarine dishonestly, and the great amount that

would flood the market were there no laws in existence. If this 470,000 pounds is valued at the average price for the past year of 22.4 cents, we have \$105,280 to the credit of the law and its execution; but if we have exaggerated to the great extent of doubling the amount, the figures \$52,000 would still show a material saving.

Samples of butter have been submitted to this department during the past year which have had amounts of moisture varying from 7 to 33 per cent. These are extreme, and yet the samples of butter were taken from goods in possession of dealers in the ordinary course of commerce, and show what is possible. Analyses of many samples of butter show that the usual amount of moisture is from 15 to 20 per cent. When butter contains an abnormal amount of water, it appears to us to be a case of adulteration so far as the moral aspects of the case go, even though there is no violation of any statute.

MASSACHUSETTS CREAMERIES.

It is difficult to get at the exact number of creameries in the State, as in a number of cases city milk dealers have a butter plant for working up their surplus milk, and it is a question whether such an establishment can be fairly called a creamery. Furthermore, in several cases where creameries have been built business has been suspended temporarily, but with a possibility of revival.

We estimate that there are 46 butter factories in the State. Thirty-three of these, mostly co-operative, reported to the agent of the Bureau, Professor Cooley, that in 1898 they made 3,750,000 pounds of butter and sold 110,000 gallons of cream. The raw material was received from 2,700 farmers, who represented 23,000 cows. The value of the product was \$842,000.

Of these co-operative creameries 5 were incorporated as far back as 1886, but the average age of those now in existence is only nine years. Most of these that have gone out of existence — West Dudley, Rutland, Leominster, Ipswich, Hampden and others — have been forced out from the competition of the sale milk business. The value of milk to sell as milk is usually in excess of its butter value; and where creameries have been located near large towns or along the

lines of railroads where milk cars run to Boston, farmers have gradually withdrawn from the creamery and gone to selling milk, except in a few instances where the creamery has turned its attention to the production of cream rather than of butter. Generally speaking, the majority of the creameries are strong and in good condition, increasing their output.

The newer creameries do not always represent new business, but a transfer of a part of the business of some older creamery. The relative rank of the first 12 creameries as to value of output is as follows: Conway, Amherst, Belchertown, Hampton, Cummington, Chester, Egremont, Charlemont, Northfield, Williamsburg, Greylock and Ashfield.

The troubles from the surplus in the sale milk business in Boston have been emphasized and become prominent through the magnitude of the business, leading to a considerable discussion of the problem in the agricultural press. But the creameries of the State are troubled in a similar way, though not so emphatically. The amount of production varies very much from month to month. Ten of the leading creameries show a maximum production in June of 177,000 pounds of butter and a minimum in September of 120,000 pounds,—a variation of 57,000 pounds in four months. This is a shrinkage from the heaviest production of 32 per cent, and presents the same problem of uneven supply that troubles the Boston milk market. Either there was a surplus of 57,000 pounds in June and nearly the same in May, or there was a shortage in the supply of that amount in August and September, and of almost that amount in November and February. Several creameries who have regular customers and keep well sold up have been obliged to buy butter from Vermont or New York to supply their customers when the home supply was short.

The conditions of individual creameries are even worse than this average. The Egremont creamery produced in June 27,000 pounds of butter and in February 11,000,—a difference of 60 per cent, or 16,000 pounds. Belchertown produced 29,000 pounds in June and 17,000 in December,—a difference of 12,000 pounds, or 43 per cent. Ashfield's percentage of difference is 52, though, as the creamery was doing a smaller business, the variation was only about 8,000 pounds.

An attempt was made to get at the annual butter yield per cow, in which there is an element of uncertainty on account of the varying number of cows that supply a creamery during the year, but the result obtained may be regarded as approximately correct; it is an average of 175 pounds. The highest return was made by Williamstown and Egremont creameries, 204 pounds each; and the lowest by Hinsdale, 127 pounds. Estimating the value of butter at 19 cents per pound, the income per cow varied from \$24.13 in the case of Hinsdale creamery to \$38.76 in the case of Williamstown and Egremont.

This showing of 175 pounds of butter per cow is very creditable to Massachusetts dairymen, when looked at from the stand-point of the fact that the census of 1885 makes the estimate that 130 pounds is the average for the country. On the other hand, it should be remembered that many dairies average 300 pounds per cow, and more is not of infrequent occurrence. In the competition under the auspices of the Guernsey Cattle Club the herd of George C. Hill & Son at Rosendale, Wis., averaged 455 pounds of butter per cow for the year; and that of L. P. Morton, Rhinecliffe, N. Y., averaged 450 pounds. Such variations — from 455 to 127 pounds of butter per cow per year — would be hardly possible in any other kind of manufacturing.

About 90 per cent of the butter produced in Massachusetts creameries is marketed in cities and towns comparatively near the creamery, and does not come into the large wholesale markets. The balance is sent to Boston and New York, and is quite largely the surplus in seasons of largest amounts made. About 85 per cent of the butter manufactured is wrapped in prints, and about 5 per cent put into five-pound boxes, showing that 90 per cent, or approximately about the same as is sold near home, is for immediate consumption.

At creamery institutes there is a general desire for some mode of inspection of dairies, because poor cream from one dairy will seriously affect the whole churning, and injure the returns to every farmer supplying that creamery with cream. But there are so many different ideas among the different creameries as to the methods to be pursued, that Professor Cooley recommended that no general inspection be attempted,

but that the Dairy Bureau secure the services of an expert, who can be called upon by creameries if wanted.

The Belchertown creamery scores dairies by a scale of points, and the following is suggested, which would also be a good scale in scoring dairies producing sale milk (on a scale of 100, 50 points are allowed for care of cows and 50 for the handling of milk) : —

Scale of Points for inspecting Dairies.

	Perfect.
Condition of cows, health,	6
Cleanliness,	6
Stables, clean,	4
Light,	5
Good ventilation,	5
Disinfected twice a year,	4
Yards, dry,	5
Feed,	10
Water,	5
Care of milk : —	
Handling, straining,	6
Submerging,	6
Apparatus, thoroughly washed,	4
Scalded,	4
Exposed to sunlight,	4
Location of cream room, dry,	2
Free from odor,	4
Ventilation,	3
Care of tank, clean,	3
Pure water,	7
Temperature,	7
	<hr/>
	100

Of the creameries investigated, 86.5 per cent use the Cooley creamer and 13.5 per cent the various separators.

Nearly 60 per cent of the cream is taken by gatherers, who make a trip every other day. Almost half of the remainder is collected four times a week.

Of the by-product, buttermilk, 82 per cent is used for feeding pigs and calves and 11 per cent is sold for domestic consumption.

MILK.

In the enforcement of the milk law we have taken 611 samples. In 19 instances the milk was so poor as to warrant prosecution. In 3 cases the defendant was discharged

on technical grounds growing out of last winter's law, leaving 16 convictions.

The result of the analyses of the milk in the 19 cases was as follows: —

	Solids not Fat (Per Cent).	Fat (Per Cent).	Total Solids (Per Cent).
No. 1,	8.29	3.05	11.34
No. 2,	8.53	2.80	11.33
No. 3,	8.64	3.05	11.69
No. 4,	7.29	3.60	10.89
No. 5,	10.24	.40	10.64
No. 6,	9.84	2.06	11.90
No. 7,	8.80	2.24	11.04
No. 8,	8.58	2.80	11.38
No. 9,	8.62	2.80	11.42
No. 10,	8.82	2.54	11.36
No. 11,	9.36	2.62	11.98
No. 12,	9.50	2.50	12.00
No. 13,	{ 7.95	3.40	11.35
	{ 8.24	3.40	11.64
No. 14,	7.64	3.13	10.77
No. 15,	7.83	3.33	11.16
No. 16,	{ 8.41	3.00	11.41
	{ 8.79	3.03	11.82
	{ 8.79	3.23	12.02
No. 17,	8.96	2.60	11.56
No. 18,	8.44	1.28	9.72
No. 19,	8.44	2.92	11.36

Last winter's Legislature passed the following law: —

Whenever the state board of health, dairy bureau, or other state or city authority obtains a sample of milk for inspection, by taking, purchase or otherwise, the analysis of said sample shall, within ten days of the procurement thereof, be sent to the person from whom the sample was obtained.

Nothing can be said against the proposition that the producer and distributor of milk should have every possible

opportunity for studying the composition of the product in which he deals and of keeping informed as to its quality. Practical experience, however, shows that in the majority of cases such laws are merely a weapon in the hands of those who would embarrass the enforcement of the law. The law is of no value to the better class of producers and dealers, for the reason that they get none of these notices. In some departments samples taken are submitted to preliminary tests, and only the suspicious ones analyzed; in one department it is held that the law is complied with by sending notices only to those who are to be prosecuted. If, however, the law is to remain on the statute books, the ten-day limit should be modified, as it is so short as to impede the enforcement of the law.

Then, again, there is no agreement as to the meaning of the law. It does not provide, as does chapter 318, section 3, Acts of 1886, that a failure to send the required notice will invalidate proceedings in court; and one judge has held that the law has nothing to do with court practice under the milk laws, and has fined a man when no notice was sent; in another case another judge made an opposite ruling, and discharged the defendant because no notice was sent.

Then, again, there is no agreement among authorities as to how much of an analysis shall be made. The Attorney-General advised us: "The law only requires you to report to the person from whom you took the sample the result of whatever analysis is made by authority of your Board."

A few days after receiving this opinion we took a sample from a dealer, ascertained the amount of total solids, reported the result within ten days, and then complained of him for handling milk not of standard quality. The defence raised the point that merely reporting the amount of the total milk solids was not "reporting the result of an analysis." The judge sustained this view of the case, and discharged the defendant. This judge held that, while the law did not contemplate so complete an analysis as going to the extreme limit, and ascertaining the amount of carbon, oxygen, nitrogen, etc., found in the milk, it did mean that more than one constituent or group of constituents should be ascertained and reported.

Still further, what is the status of a case, if a notice is sent but not received? In most cases we have sent the notice by registered letter. In two instances, however, the letter has been returned, either because the post-office address was incorrect, or because the milkman refused to accept the letter, presuming on its contents.

We can see no benefit from the law ; but, if it is to remain, its vagueness should be remedied.

The Legislature of last winter added September to the months during which the statute standard for sale milk should be 12 per cent ; in other words, reduced the standard from 13 to 12 per cent during the month of September.

Many years ago the State started on the policy of having a statute standard for milk, and having that standard 13 per cent. Against this statute there has been a constant attack. At length April and May were excepted from its provisions, and the standard made 12 per cent for those two months ; Then, after a while, June, July and August were added to the 12 per cent months, and last winter, September.

The argument before the committee for this change was that during September cows are fed largely on corn fodder, which produces milk of inferior quality, so far as total solids are concerned ; consequently, it was claimed that the standard should be lowered for September.

If it appears that the policy of the State in establishing the 13 per cent standard was wrong, it would be much better to reverse that policy openly and squarely than to kill it by piecemeal. No one would think of slaughtering an animal by occasionally cutting a few inches off the end of its tail. At any rate, such an unscientific argument as that presented last winter should not be considered. It is well known by all who have studied the question of milk composition that the food of the cow has little to do with the amount of total solids in the milk ; that the amount of casein, sugar, fat, etc., in milk depends on the individuality of the animal. A cow born to give 10 per cent milk cannot by any process of feeding be made to give 13 per cent milk.

We are not yet, however, convinced that the State was wrong in the position it took years ago in favor of a 13 per cent standard. Thirteen per cent milk is average milk, and

the majority of cows give milk of that quality. By mixing the milk of different animals, herd milk will be found very uniform in quality, and almost always up to or above the standard. We believe that a 13 per cent statute is in the interest of the consumer, and we also believe that it is in the interest of the producer, for it helps business to the extent that it keeps off from the market all milk below the standard. It seems to us against the interests of the great majority of farmers, and of agriculture generally, that the minority who own cows producing low-grade milk should by their persistency succeed in engrafting their views upon the statute book.

During two weeks of the past year we undertook an investigation of the quality of milk sold for a week before and after the statute standard changed, testing the milk for fat only, by the Babcock tester. The agents of the Bureau were instructed to take samples in Springfield, Somerville, and Chelsea during the last week in September. The first week in October, when the standard had changed to 13 per cent, they were sent over the same territory, to take samples from the same milkmen, so far as was possible. Three or more samples were taken the last week in September and the first week of October from each of 28 milkmen. In 14 cases the milk averaged the same amount of fat in October that it did in September; in 11 instances there was a slightly increased quantity in October, the gain ranging from .4 to .6 of fat. Three cases of adulterated milk were found in October where the milk was all right in September, causing a decrease in the amount of fat.

Stating the case in another way, we took in September, under this experiment, samples as follows:—

CITIES.	Samples.	Average Per Cent of Fat.
Springfield,	42	3.50
Somerville,	30	3.40
Chelsea,	45	3.60
Total,	117	3.50

Earlier in the month 27 samples were taken in Williamstown and North Adams, which averaged 3.70 per cent of fat.

The first week in October, samples were taken as follows :—

CITIES.	Samples.	Average Per Cent of Fat.
Springfield,	45	3.70
Somerville,	30	3.60
Chelsea,	45	3.60
Total,	120	3.63

It appears that there was no material increase in the quality of milk when the statute standard changed, on the part of these milkmen, and that both in the last week in September and the first week in October the milk was substantially up to 13 per cent of total solids. So far as this experiment throws any light upon the situation, the average milk that is sold in Massachusetts has 13 per cent total solids in September as well as in October, and the milk sold in September was substantially above the statute standard of 12 per cent total solids.

During the past year, the perplexing conditions of the milk business have led to the organization of the milk peddlers in several places, for purposes of mutual protection. In two cases the assistant executive officer of the Bureau has been called on to address them on the milk law and its operation. In one case 32 samples of milk were tested with the Babcock test before the meeting, as an object lesson on the composition of milk, showing the value of the Babcock tester to dealers in sale milk. The average of these tests was 4.14 per cent of butter fat. Among the samples were two or three which were brought in as suspicious, and brought down the average.

We have made much effort to emphasize the point that the enforcement of the law is of advantage both to peddlers and producers. Very often the milk peddler, accosted by an inspector, particularly in the early morning hours, is

annoyed at the interference, and looks upon the inspector as his natural enemy. This should not be so. The milk laws not only insure the consumer an article of higher quality than he would get were it not for them, but, as said before, they help business by keeping a large amount of low-grade and adulterated milk off the market.

The condition of the Boston milk market has been much healthier than for several years past, as supplies have decreased and consumption has increased. This has reduced the burdensome surplus; for three months of the year it was so small that the wholesalers paid full price for all milk received by them. The advancing price of butter has increased the butter value of milk, so that the diminishing surplus has brought a better price, and this has increased the average return per can.

The following table gives the receipts, sales and surplus of railroad milk, in $8\frac{1}{2}$ quart cans, brought into the greater Boston, as reported by the contractors' association: —

1899.	Received.	Sold.	Surplus.
January,	904,575	699,003	205,572
February,	825,972	631,762	194,210
March,	980,093	699,796	280,297
April,	1,004,773	717,254	287,519
May,	1,160,994	750,592	410,402
June,	1,137,103	792,833	344,270
July,	1,003,661	815,095	188,566
August,	927,433	756,842	170,591
September,	870,140	729,734	140,406
October,	853,049	809,701	43,348
November,	767,567	746,040	21,527
December,	799,404	763,319	36,085
Totals,	11,234,764	8,911,971	2,322,793

	Receipts.	Sales.	Surplus.
1898,	11,317,761	8,564,682	2,753 079
1897,	11,798,191	8,738,572	3,059,619
1896,	10,772,108	8,087,378	2,684,730
1895,	9,856,500	8,040,732	1,815,768
1894,	9,705,447	7,657,421	2,048,026
1893,	9,263,487	7,619,722	1,643,765
1892,	9,212,667	7,315,135	1,897,532

The price agreed upon between producer and wholesaler is a theoretical figure, called the Boston price. There is a scale of discounts from this price, varying according to the distance from the city, so that, when the Boston price is agreed upon, each producer, knowing the belt or zone in which he lives, can get at the price that he will receive. This Boston price has been for several years as follows:—

	Summer (Cents per Can).	Winter (Cents per Can).		Summer (Cents per Can).	Winter (Cents per Can).
1886,	30	36	1893,	33	37
1887,	30	36	1894,	33	37
1888,	32	38	1895,	33	37
1889,	32	38	1896,	33	35
1890,	32	36	1897,	33	35
1891,	33	37	1898,	32	34
1892,	33	37	1899,	32	34

The decline in 1898 and 1899 is only a paper one. The scale of discounts from the Boston price was decreased for those years, so that the net to the farmers was unchanged.

CONDENSED MILK.

During the past year the agents of the Bureau happened upon some samples of condensed milk which were not labelled with the name of the manufacturer according to law. This being suspicious, samples were taken for analysis, and the chemist reported that they were materially deficient in fat; consequently, cases were entered in court. As soon as the news reached the manufacturers, they made emphatic protestations as to the quality of the milk and the probable error in sampling or analysis. Their statements were so emphatic, and apparently so sincere, that it seemed both prudent and just to go extremely slow, and verify the chemical work of Dr. Davenport. As a result of this caution, he ascertained a fact unknown to general commercial chemists and authors of text books on the subject, though in the possession of a few specialists employed by condensed milk manufacturers,—that the addition of cane sugar to condensed milk, which is done by the majority of manufacturers, locks up the fat globules in such a peculiar way that ordinary processes of analysis fail to secure all of it; on discovering this, and using different processes, the original work was found to be in error, and the cases withdrawn.

CREAM.

The consumption of cream is increasing very rapidly in Massachusetts. In all of the large cities cream has become a staple article in all grocery and provision stores, while large amounts are delivered by the milk peddler. Most of this cream comes from Maine, and several Maine creameries have built up an enormous business. Professor Cooley estimates that only about one-twentieth of the cream sold in Massachusetts is produced in the State. It would seem as though the production of market cream holds out great possibilities to Massachusetts creameries, especially in view of the fact that the demand for cream is the largest in the summer, when the production of butter is largest, the surplus most burdensome and the price the lowest. Where there is a market for cream, butter fat is worth from 2 to 3 cents a pound more in market cream than in butter. The

production of cream at creameries on the factory plan promotes uniformity in quality, and enhances popular confidence in it.

CHEESE.

Cheese is the only dairy product in the State which requires very little or no work on the part of those entrusted with the enforcement of the dairy laws. There seems to be no effort to introduce adulterated or counterfeit cheese into the Massachusetts markets, largely, so far as we are informed, because most dealers are in the habit of buying cheese from sections where adulteration is not practised very much. The State law relative to adulterations is now reinforced by the national law against filled cheese, but we find none in the State.

The quality of cheese sold in the market varies greatly, and, as Massachusetts has no provisions relative to branding cheese, or relative to the fraudulent claim of cheese being full cream when it is made from partially skimmed milk, there is possibly an imposition on the public at times. Cheese made from whole milk will vary relatively as much in per cent of fat as does the milk itself; and full cream cheese from milk having 2.5 or 3 per cent of fat cannot be readily detected from cheese made from milk containing from 5 to 6 per cent of fat which has been partially skimmed.

VOLUNTARY ASSISTANCE.

It frequently happens that the appropriation limits our work rather than inability to find something to do, and that important things must therefore be left undone. To promote efficiency and economy of action, the following circular was issued early in the year, and copies have been sent out from time to time to friends of the law : —

COMMONWEALTH OF MASSACHUSETTS.

DAIRY BUREAU.

DEAR SIR : — Any information which you can give me relating to the illegal sale of dairy products or imitation dairy products (oleomargarine) in your town or city will be thankfully received and kept in strict confidence.

GEORGE M. WHITAKER.

P. O. Box 1332, BOSTON, MASS.

This has resulted in securing much valuable assistance and putting us in possession of information which could not otherwise have been obtained, at least not without great expense.

EDUCATIONAL WORK.

In this department more than the usual amount of work has been done, and the expense has been more than twice the average of the five preceding years. In last year's report we called attention to institutes held in co-operation with the Massachusetts Creamery Association. Early in this year a buttermakers' institute was held by the Dairy Bureau and the Creamery Association at Amherst. It was a well-attended, profitable meeting, with a good program and a large exhibit of butter,—41 entries in all. The papers read at this institute and the results of the meeting were so important that the Bureau issued a special bulletin, giving a report of the same; it is therefore unnecessary to repeat the substance here.

The Worcester South Agricultural Society has continued its offer of a prize for the cow giving the greatest amount of butter fat on the society's grounds during twenty-four hours of the society's exhibition. This prize has been awarded by the representative of the Bureau for several years, and the custom was continued this year. The following is the statistical result of the test:—

MELVIN SHEPARD, *Sturbridge, Mass. (Grade Jersey).*

	Weight of Milk.	Per Cent of Fat.	Weight of Fat.
	lbs.		lbs.
Night,	12.06	5.00	.603
Morning,	14.00	5.00	.700
Totals,	26.06	—	1.303

C. L. UNDERWOOD, *East Brookfield, Mass. (Grade Guernsey).*

	lbs.		lbs.
Night,	17.75	3.80	.674
Morning,	17.01	3.20	.544
Totals,	34.76	—	1.218

J. E. MAHAN, Charlton, Mass.

	Weight of Milk.	Per Cent of Fat.	Weight of Fat.
	lbs.		lbs.
Night,	8.56	6.60	.565
Morning,	5.06	6.00	.303
Totals,	13.62	—	.868

A. L. WOODIS, North Brookfield, Mass.

	lbs.		lbs.
Night,	8.12	3.60	.292
Morning,	11.06	3.60	.398
Totals,	19.18	—	.690

This system of judging milch cows is excellent, and the Worcester South Agricultural Society is entitled to credit for its pioneer educational work in this line, the more so because anything of this kind does not appeal to the crowd, and has nothing spectacular about it to draw admission fees and increase the society's income. It is purely educational, but of great value in that way. The ideal work in this line, however, is in testing cows at the barns where they are ordinarily kept, as sometimes the driving to the fair grounds and the unusual noises and conditions at the show have such an effect upon the nervous temperament of the animal that she does not do her best.

The inspection of creameries, to which allusion has been previously made and from which some statistics have been quoted, was of value to the creameries from the educational stand-point, and elicited some technical information, which will be the subject of a special bulletin.

The representative of the Bureau has been called upon 16 times to address farmers' meetings or to speak on dairy topics. Three meetings of this kind have been held where members of the Bureau or of the Cattle Commission have been speakers, making in all 19 meetings to the credit of

the Bureau. At several meetings addressed by Mr. Whitaker the Babcock tester has been used, and 87 samples of milk tested. In addition to the above, he has attended a meeting of the Pure Food Congress in Washington, and meetings of the State Association of Boards of Health.

The following is the manner in which the appropriation of \$7,000 has been expended:—

Members of the Bureau, travelling expenses and attending meetings,	\$371 29
Agents' salaries,	1,657 77
Agents' expenses,	2,299 15
Chemist,	1,320 15
George M. Whitaker, travelling and office expenses, supplies, mileage tickets, etc.,	850 48
Educational work,	421 04
Printing and supplies,	80 12
<hr/>	
Total,	\$7,000 00

GEORGE M. WHITAKER.

Accepted and adopted as the report of the Dairy Bureau.

D. A. HORTON.
J. L. ELLSWORTH.
C. D. RICHARDSON.

PUBLIC DOCUMENT

. . . . No. 60.

TENTH ANNUAL REPORT

OF THE

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED

UNDER CHAPTER 412, ACTS OF 1891.

JANUARY 15, 1901.

BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
18 POST OFFICE SQUARE.
1901.

TENTH ANNUAL REPORT

OF THE

Mass:

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED

UNDER CHAPTER 412, ACTS OF 1891.

JANUARY 15, 1901.

BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
18 POST OFFICE SQUARE.

1901.

61A.32M3
D13L
1900
B

DAIRY BUREAU—1900-1901.

J. L. ELLSWORTH, WORCESTER, *Chairman.*

C. D. RICHARDSON, WEST BROOKFIELD.

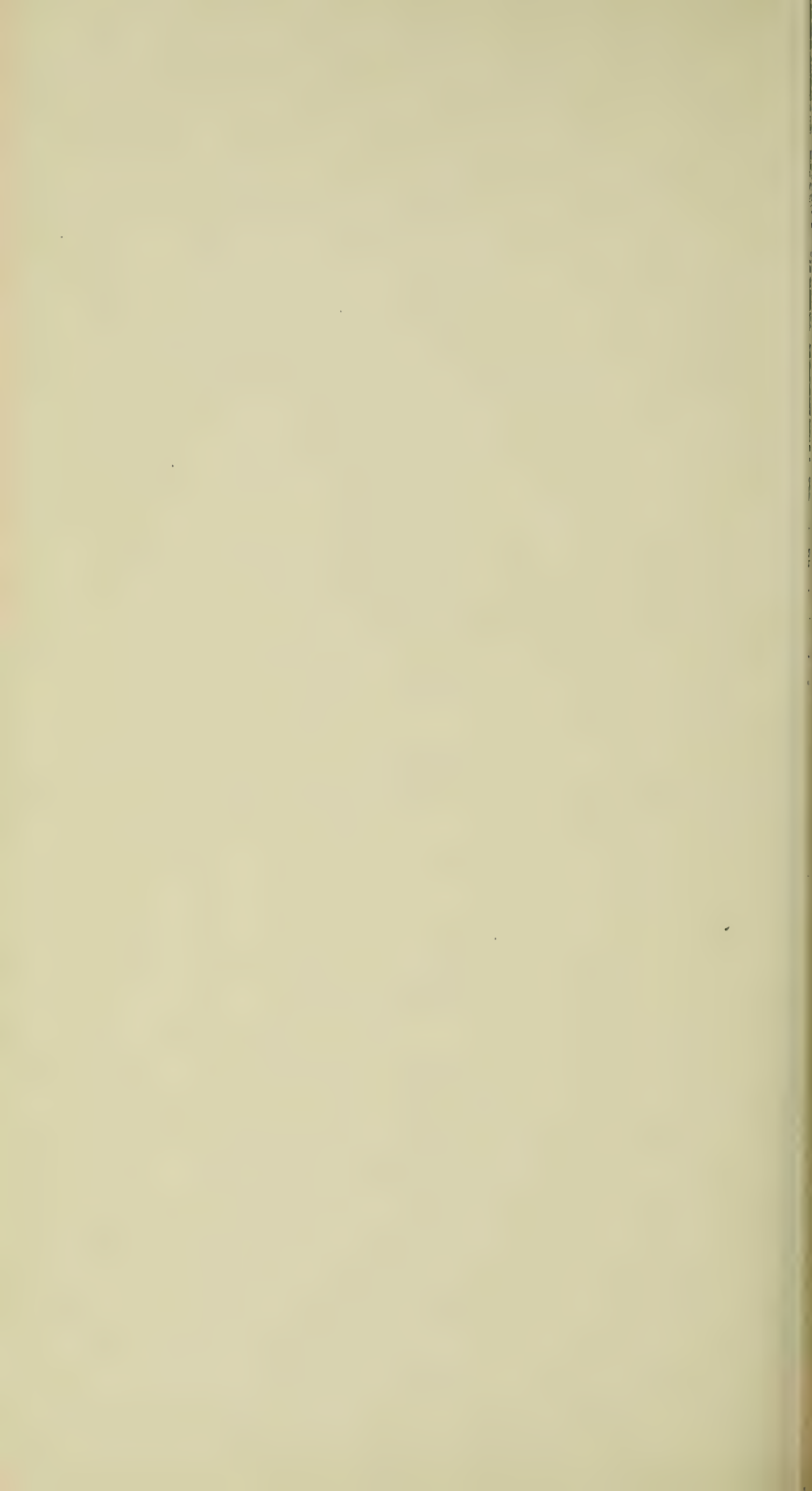
F. W. SARGENT, AMESBURY.

Executive Officer.

J. W. STOCKWELL, *Secretary of the State Board of Agriculture.*

General Agent.

GEO. M. WHITAKER, BOSTON.



REPORT.

The work of the Dairy Bureau for the past year shows greater results than for any previous year of its history. The year 1900 has been a record breaker in number of cases in court, number of convictions and amount of fines imposed. In our report for 1899 we told of a year of exceptional activity, but we did even more in 1900 than in the previous year. From one point of view we regard this record with much satisfaction. As long as there are those in the community who are law breakers, — who deal in counterfeit, adulterated or low-grade products, — we feel some pride at the number we have been able to bring to justice, and at the amount of success which has attended our fight for pure, honest, standard dairy products. We also believe that, if the amount accomplished is measured by the appropriation for this department, we have further reasons for self-complaisance; for, creditable as are the results secured, they have been limited by the appropriation; we have been compelled in a number of instances to go slowly or to suspend work altogether, because the money at our disposal was running low. The city of Boston pays \$13,000 for expenses and salary of its milk inspector, while the State of Massachusetts appropriates only \$8,200 for its Dairy Bureau, with which to cover the whole State. The real disproportion of the appropriation is even more than this, for the Boston milk inspector can reach any portion of his territory for an eight-cent fare, while to send an officer of the Dairy Bureau to North Adams, for instance, may mean \$7.50 in railroad fares and at least one night's hotel bills.

Viewed in a broad way, our record of the past year does not bring unalloyed satisfaction. The true citizen ought not to regard with pride a long list of criminal prosecutions or large figures in the annual summary of court records. While such facts may speak well for the vigilance of the authorities

and the faithfulness with which they have worked, the statement also tells of the existence of a considerable spirit of lawlessness, of the existence of a class that has no respect for the expressed wishes of the majority of the people, — a class that would strike a blow at the very essence of democratic institutions.

We feel that this is emphatically true in regard to the violation of food laws. The violators of these enactments do not come from the so-called criminal classes, from those with inherited appetites and passions, from those whose ignorance has blunted moral instincts. The people who, from a spirit of avarice, impose upon the consumers of the State adulterated, fraudulent or low-grade foods, are often gentlemen of fair or even good standing in business, society or politics. These gentlemen cheat consumers, injure honest commerce and defraud producers; and in so doing they show a most reprehensible disrespect of law and order, and by their standing they exert a peculiarly bad influence in the community.

The membership of the Bureau has undergone a change during the past year by the death of the chairman, Mr. D. A. Horton of Northampton, Mr. F. W. Sargent of Amesbury being appointed in his place. This change removed from the Bureau the last of the original appointees. The Bureau was organized in 1891, with Messrs. C. A. Hartshorn of Worcester, D. A. Horton of Northampton and Geo. L. Clemence of Southbridge as members. As terms of office as members of the Board of Agriculture expired, Mr. Hartshorn was succeeded by Mr. Ellsworth and Mr. Clemence was succeeded by Mr. Richardson. On the reorganization of the Bureau, after the death of Mr. Horton and the appointment of Mr. Sargent, Mr. J. L. Ellsworth, the senior member, was elected chairman. The administrative work has continued in the same hands as heretofore, but with a change in the title of the position and with a statutory definition of the duties involved.

In the reports of the Bureau for the years 1896 and 1897, attention was called to the vague and somewhat misleading allusion to the position in the statutes; chapter 412, section 6, of the Acts of 1891, providing for an “assistant to the

secretary of the board of agriculture, . . . to assist in the work prescribed in the eleventh section of this act.” Last winter’s Legislature remedied this, and, in the interests of increased efficiency, gave the Bureau’s administrative representative official recognition as an independent individuality, and defined his duties.

Chapter 368, Acts of 1900, says: “The state board of agriculture shall at its annual meeting elect a general agent of the dairy bureau, to assist the bureau and to oversee, under its direction, the work prescribed in section eleven of chapter four hundred and twelve of the acts of the year eighteen hundred and ninety-one.”

Two regular inspectors have been employed during the year, P. M. Harwood and Ralph M. Horton. Several special inspectors have been employed from time to time for brief periods to help in detective work, where a person whose appearance was unfamiliar could temporarily be of great service. Three chemists have been employed: Dr. B. F. Davenport for the eastern part of the State, E. R. Barker for Worcester and E. B. Holland of the Hatch Experiment Station for the western part of the State.

In a general way and statistically the work of the past year may be summarized as follows:—

Inspection of places in which dairy products or im-	
itation dairy products were sold or stored, but	
where the law seemed to be complied with and no	
samples were taken,	1,612
Real or imitation butter, samples taken,	755
Milk, samples taken,	68
Cream, samples taken,	3
Cases in court,	178
Meetings addressed,	18
Work at fairs.	

The comparison of the court cases for 1900 and some previous years may be of interest:—

1900,	178	1897,	27
1899,	87	1896,	79
1898,	60	1895,	82

IMITATION BUTTER.

The work of the past year has been almost exclusively devoted to the enforcement of the imitation butter laws, the manufacturers of this counterfeit product having crowded its sales harder than ever. Last year we reported renewed exertions on their part, avarice having lead them to become law breakers. The tendency during the year just past has been even stronger in the same direction. These increased efforts on their part at violating the law have compelled us to confine our labors to checkmating them, with the result that the offences charged in the court cases have been as follows : —

Violation of the anti-color oleomargarine law, . . .	145
Serving oleomargarine in hotels and restaurants	
without giving notice,	32
Obstructing officers in the prosecution of the work, .	1
<hr/>	
Total,	178

Evidence has also been secured of several violations of the law which could not be tried during the year, and will appear in the next year's records, and of several additional cases in which the defendant could not be found. Of the cases for violating the anti-color law, the complaint in nearly every instance charged "possession with intent to sell within this Commonwealth," although we had evidence of actual sales in 55 cases. In 49 out of these 55 cases butter was called for by the purchasers; in 2 of the remaining 6 the seller supposed that his customer was a pedler, and suggested that the article be sold as real butter. In 17 sales taken at random the average price paid by the supposed consumer was 22.23 cents per pound. If the manufacturer charged the dealer 13 cents, the retailer made a profit of 70 per cent.

The oleomargarine cases which we have had in court for the past few years have been as follows : —

	Anti-color Law.	Hotel and Restaurant Law.	Obstructing an Officer.
1900,	145	32	1
1899,	47	13	5
1898,	13	3	5
1897,	16	5	5

The result of the court cases in 1900 was as follows : —

Convictions,	144
Acquittals,	26
Nol pros,	8
Total,	178

Some of the cases that were lost or nol prossed resulted in smoking out the party who was really guilty and in securing his conviction, so that the above 34 cases are not wholly a debit. Of the 26 cases lost, a few are of more than ordinary interest. In the case of obstructing an officer, the offence consisted in the refusal of the defendant to unlock a room in his residence in which imitation butter was stored. The court ruled that a mere refusal to unlock a room was not an obstruction, hindrance or interference, but informed us that we could have broken into the room, under the law. In 3 cases the defence showed that the parties being tried had bakeries, hence finding imitation butter in their stores did not make out a *prima facie* case of *intent to sell*. In 2 instances the colored oleomargarine was found in the possession of pedlers in a city adjoining the Rhode Island line, and the court held that it had a reasonable doubt as to whether the imitation butter was in defendant's possession with intent to sell *within this Commonwealth*.

In four cases the defence claimed that the sales took place, as a matter of law, in Rhode Island, and the court held that the facts presented were not inconsistent with that theory. The defendant was at once complained of for "taking orders for the future delivery of an imitation of yellow butter," and was convicted. This, we think, is the

first case ever tried under that particular clause of the anti-color law. In one instance the defendant sought to clear himself by the claim that he had disposed of the business before the sample was taken, and the alleged purchaser was one of his witnesses to confirm his evidence; a complaint against this purchaser was sworn out while the trial was in progress. When the defendant was acquitted, the new purchaser was arrested, arraigned, fined and paid \$100 before leaving the court room.

In addition to the above imitation butter cases there have been two perjury cases. In one the judge of the district court believed perjury had been committed, and bound the defendant over for the grand jury. When the oleo dealer found that he had been indicted for both perjury and the sale of imitation butter, he offered to plead guilty to the oleomargarine case and pay what fine might be imposed, if the perjury case would be filed; to this proposition the district attorney agreed. In the other case the defendant set up an *alibi*, which did not convince the judge of the district court, and conviction followed. The same tactics in the superior court led to acquittal; but the district attorney's examination was very searching, and a stenographic report of the evidence secured; the statements were subsequently investigated, and perjury proceedings instituted.

This case was of more than ordinary interest in another way. One of the most persistent places for violating the law has been 122 South Main Street, Fall River, of which George Morrow was for some time the proprietor. He was convicted from time to time, until he deemed it prudent to "sell out." But the law continued to be violated, and the alleged purchaser of the store could not be found, while Morrow or some of his relatives were the only ones our inspectors ever saw in charge of the store. During the past summer 15 additional cases were brought for offences committed at this store, 4 against George Morrow, 2 against a brother and 8 against two brothers-in-law. All were found guilty in the lower court, and as one result a summons was served on the general agent of the Bureau as defendant in a civil suit for \$5,000 damages, malicious prosecution being alleged, according to the local papers. Morrow, in the

superior court, after a long trial, was found guilty on 1 case and fined \$500; 3 other cases in which he has been adjudged guilty are hanging over him for sentence. Brother-in-law Reed pleaded guilty to 6 complaints, and paid a fine in 1 case, 2 were continued for sentence and the others filed; the cases against the brother and one against Brother-in-law McCutcheon have not yet been reached in the superior court; the other case against Brother-in-law McCutcheon was the one above alluded to. Three appealed cases, with fines aggregating \$450, against George Morrow have not yet been tried in the superior court.

Another old offender has been fined \$500 in the Lawrence court, and there is a \$300 fine hanging over the same person in the superior court.

Dr. Harrington, Boston's milk inspector, followed one slick, persistent violator of the law till the court imposed imprisonment.

The result of the enforcement of these laws in Massachusetts is that, according to figures submitted to Congress last winter, the consumption of imitation butter in this State last year was .73 of a pound per capita; while in the adjoining State of Rhode Island, where there is no law, the amount consumed was 8.45 pounds per capita. If we estimate the per capita consumption of butter or its imitations at 8 ounces per week, the amount consumed in a year would be 26.5 pounds, of which in Rhode Island a little less than one-third was counterfeit. It requires but little imagination to see the great injury which such a business in Massachusetts would cause to producer, consumer and middleman.

The number of persons who pay a United States tax, as shown by the following table, has some bearing on the effect of the law:—

YEARS ENDING JUNE 30—	Wholesale.	Retail.
1891,	34	451
1892,	16	269
1893,	28	188
1894,	28	248
1895,	30	196
1896,	2	37
1897,	1	28
1898,	1	28
1899,	12	76
Present year,	3	59

The methods of the Bureau have been attacked in court on five points, which have been taken to the supreme court in the cases against Mullen, Suffolk County, May 17, and against Ryberg, Worcester County, October 18. Our practice has been vindicated on every point.

A statute of 1884 provided for certain marks on tubs, boxes and wrapping paper used in connection with sales of oleomargarine. The same act also provided certain details in regard to samples of milk. Section 4 of this act said that "before commencing the analysis of any sample the person making the same shall reserve a portion, and in case of a complaint against any person the reserved portion of the sample alleged to be adulterated shall upon application be delivered to the defendant or his attorney." Subsequent legislation provided other details in the milk law which led the supreme court to declare the above section 4 to be repealed by implication. The oleomargarine people maintained that the supreme court meant to say that only so much of the law as related to milk was repealed, and they insisted that the law was in effect when samples of oleomargarine were analyzed. The chemists of the Bureau, under instruction from the general agent, did not reserve portions of oleomargarine which they tested, as he claimed,

first, that the section of the law referred to was unqualifiedly repealed, and, second, if it was not, it did not apply to a law passed seven years after prohibiting traffic in an imitation product, because of its counterfeit nature, but where there was no allegation of any adulteration.

The supreme court said: "We do not see any sufficient ground for interpreting either section 4 as purporting to embrace samples that should be taken under future legislation or the act of 1891 as impliedly adopting section 4 of the act of 1884."

An objection was made to our form of complaint, on the ground that it did not contain the official title of the complainant, the general agent of the Dairy Bureau; it was also argued that inspectors of milk are the only officers authorized to make complaints. To this argument the supreme court said it is a sufficient answer that the same authority is plainly given to the representative of the Dairy Bureau. "As to the form of the complaint, if we should assume, for the purposes of decision, that only the persons named have authority to make complaints under the act, no doubt the office of the complainant should be alleged, but the defect at most is formal. Probably it would not be sufficient ground for a motion to quash. But the short answer to the whole matter is that the statute does not prohibit any person from making a complaint."

A third attack was the charge that our standard form of complaint "does not allege that the substance was not in a separate and distinct form, and in such manner as will advise the consumer of its real character." The court says: "This means that the complaint should have negatived the proviso that the act shall not be taken to prohibit the sale of oleomargarine in a separate and distinct form, etc., 'free from coloration or ingredient that causes it to look like butter.' The motion disregards these last words. The complaint alleges that the oleomargarine was in imitation of yellow butter produced from unadulterated milk or cream, and thus sufficiently shows that the proviso does not apply. The defendant had no right to keep such a substance for sale in any form or manner. Probably in any case it was unnecessary to negative the proviso."

The fourth point of attack was that the complaint "does not allege that said substance was renovated butter." The court says: "We presume that this should have read, 'was not renovated butter,' to express what was intended. It is not necessary, when charging a well-defined statutory offence, to explain that you are not charging another and quite different one."

The last ground of attack was that "the complaint is in the alternative when it alleges that the substance was made from adulterated cream or milk." To this the court says: "The complaint makes no such averment. It alleges that the oleomargarine was made partly out of an oleaginous substance not produced from unadulterated milk or cream, which is a very different allegation. If all the substances of which the subject matter of the charge was composed were produced either from unadulterated milk or from cream from the same, there would have been no offence under the statute in question; therefore both possibilities were negatived."

Another year's experience emphasizes our previously expressed opinions as to the dishonest nature of the imitation butter business and the deceptive methods used to bolster it up. Much has been said during the past few months, in connection with proposed legislation at Washington, the Grout bill, about the wholesomeness and food value of oleomargarine. Admitting, for argument's sake, that all these statements are true as to matters of fact, they are nevertheless deceptive in their application, because they attempt to befog an issue and deceive those to whom such claims are addressed. Water is wholesome, but add it to milk and its sale is prohibited; peas have a high food value, but when added to coffee the mixture is a swindle; lard and tallow are wholesome and have a food value, but when mixed and colored to imitate butter the compound becomes a counterfeit and a cheat. These oleomargarine laws are aimed at a commercial fraud. As District Attorney Rockwood Hoar said, in his brief in the Ryberg case, speaking of the anti-color law: "It relates to a deception addressed to the eye, and not the substance or component parts of the article."

Of a similarly deceptive nature is all of the talk about coloring butter which emanates from the defenders of oleo-

margarine. We do not defend coloring butter, — we wish such a custom did not prevail. But the practice deceives no one; a man who buys fresh creamery butter in December can hardly expect that he is buying June butter, — an inferior article. Butter is not colored to imitate another and more desirable article. But, even if we admit (which we do not) that these claims of the oleomargarine advocates are true as abstract statements of fact, what do they gain? When the law has its hands on pickpocket O, shall he be released and go scot free because he says C is also a pickpocket?

Dr. E. N. Eaton, the official analyst for the State of Illinois, in a recent article lays down this principle as governing the use of coloring matter in food products: “Harmless artificial coloring matter may be used for the sake of variety or uniformity, or in deference to the demand of customers, in goods where such coloring is not used to conceal inferiority, indicate strength or to imitate a higher-priced article.” This dictum would allow the coloring of butter but not of oleomargarine, the coloring of which is “to imitate a higher-priced article.”

The principle of the Massachusetts anti-color law has been several times reaffirmed in trade-mark cases. The latest was in a beer case, in which the defendant was enjoined from selling any beer under plaintiff’s name and inscription, and also from selling “any *colorable imitation* thereof.”*

Last year we called attention to the use of imitation rather than genuine butter in public institutions. Since then we have seen the report of one of these institutions in which we know this article is used. But the financial statement shows the purchase of only butter, and in the menus we find “bread and butter” several times, but nowhere “bread and oleomargarine.” If the latter is so wholesome, has such food value, has so many virtues, why would not a bill of fare be rendered more attractive by the line “bread and oleomargarine?”

* Van Nostrand v. McGee.

RENOVATED BUTTER.

The flagrant attempts at violating the imitation butter laws have used so much of our appropriation that we could do little by way of enforcing the law in regard to renovated butter, although many notices have been sent to persons selling it, and no attempts at wilful violation have been found. This law is much misunderstood. The State does not interfere with the sale of this article, but asks that it shall be sold honestly, viz., properly marked or labelled. The "New York Produce Review" says: "The process of renovation impresses one as being cleanly and wholesome, and, while incalculable damage might result from an unscrupulous substitution of this product for genuine butter, its manufacture and sale under appropriate designating name must be regarded as beneficial to the butter industry as a whole."

This tells the whole story; all that the law asks is that the product shall be sold "under appropriate designating name."

BUTTER.

The Chamber of Commerce figures regarding the butter business in Boston for 1900 and the immediately preceding years are as follows:—

	1900. Pounds.	1899. Pounds.	1898. Pounds.	1897. Pounds.	1896. Pounds.
On hand January 1, . . .	2,073,800	2,829,160	2,473,600	2,898,000	1,659,434
Receipts for the year, . . .	51,502,840	49,757,606	50,609,552	51,107,033	50,972,255
Total supply, . . .	53,576,640	52,586,766	53,083,152	54,005,033	52,631,689
Exports, deduct, . . .	1,002,374	3,051,710	1,574,682	3,286,333	3,156,741
Net supply, . . .	52,574,266	49,535,056	51,508,470	50,718,700	49,474,948
Stock on hand December 31, deduct,	3,285,960	2,073,800	2,829,160	2,620,680	2,898,080
Consumption, . . .	49,288,306	47,461,256	48,679,310	48,098,020	46,576,868

The above shows increased receipts, reduced exports and increased consumption for 1900 over the four previous years. The increased consumption for the year over 1899 was 1,827,050 pounds. Such an increase could hardly have occurred had the sale of imitations been unrestricted. It is

hard to estimate the consumption of butter in Massachusetts, but with the above official figures for the Boston market it is safe to add one-half for the rest of the State. This gives us 74,000,000 pounds, which certainly is not an over-estimate. The consumption of oleomargarine, according to the United States internal revenue figures in 1899, was 2,083,899 pounds, — a very small amount in comparison with the total consumption of butter.

The following table shows the extreme quotation for the best fresh creamery butter in a strictly wholesale way in the Boston market for six years : —

	1900. Cents.	1899. Cents.	1898. Cents.	1897. Cents.	1896. Cents.	1895. Cents.
January,	29.5	21.0	22.5	22.0	26.0	26.0
February,	26.0	24.0	21.5	22.0	24.0	25.0
March,	27.0	22.5	22.0	23.0	24.0	23.0
April,	21.0	21.0	22.5	22.0	22.0	21.0
May,	20.5	19.0	18.0	18.0	17.0	19.0
June,	20.5	19.0	17.5	16.0	16.5	20.0
July,	20.5	19.0	18.5	16.5	16.5	19.0
August,	22.5	21.5	19.5	19.0	17.5	21.0
September,	22.5	23.5	21.0	22.0	17.5	22.0
October,	22.0	24.0	21.5	22.5	20.0	23.0
November,	25.0	26.5	21.0	22.0	21.0	23.0
December,	25.5	28.0	21.0	23.0	23.0	28.0
Averages,	23.5	22.4	20.5	20.6	20.4	22.5

Although butter did not go as high in price during the fall months of 1900 as in the fall of 1899, it did better earlier in the year, and did not drop so low during May, June and July, — the months of flush production ; so that the average price for the year is 1.13 cents more than for 1899, and is the highest average for six years. This explains the incentive to crowd the sale of fraudulent substitutes.

MILK.

The increased cost of milk production has caused much effort during the year to get better prices. These efforts have been successful in many instances, and in some places have resulted in a closer organization of producers. In the spring the farmers supplying the Boston market secured an

advance of 2 cents per $8\frac{1}{2}$ quart can over the usual summer price for the six-months period from April 1 to October 1. This applied to 4,633,000 cans sold and 116,000 cans of surplus, and therefore meant an increased income to the farmers of \$95,000. The amount came out of the middlemen, as no increase of retail price to consumers was made. In October the price for the winter six months was advanced 4 cents per can over the hitherto prevailing winter prices. This advance was so much that the dealers attempted to get it back by advancing the retail price. The movement resulted in such a remonstrance that the attempt was abandoned. Consequently the Milk Producers Union and the contractors agreed to the dropping of one-half of this advance January 1. This is the first time in the history of the business that there has been a change in the price during a six-months period.

The following table gives the receipts, sales and surplus of railroad milk, in $8\frac{1}{2}$ quart cans, brought into the greater Boston, as reported by the contractors' association : —

1900.	Received.	Sold.	Surplus.
January,	808,699	762,437	46,262
February,	750,368	692,981	57,387
March,	868,440	800,825	67,615
April,	904,752	773,720	131,032
May,	1,019,632	784,209	235,423
June,	1,085,766	784,164	301,602
July,	978,872	810,989	167,883
August,	889,590	737,618	151,972
September,	845,995	744,623	101,372
October,	872,642	703,844	168,798
November,	799,122	678,788	120,334
December,	783,806	701,340	82,466
Totals,	10,607,684	8,975,538	1,632,146

	Receipts.	Sales.	Surplus.
1899,	11,234,764	8,911,971	2,322,793
1898,	11,317,761	8,564,682	2,753,079
1897,	11,798,191	8,738,572	3,059,619
1896,	10,772,108	8,087,378	2,684,730
1895,	9,856,500	8,040,732	1,815,768
1894,	9,705,447	7,657,421	2,048,026
1893,	9,263,487	7,619,722	1,643,765
1892,	9,212,667	7,315,135	1,897,532

This shows receipts less than for either of the four preceding years. The receipts for 1900 were less than for the corresponding month of 1899, except October and November. The sales for 1900 were the largest of any year on record. This gain was made in the first five months of the year and in September. In June, July and August the sales were 33,000 cans less than for the corresponding months of 1899. In October, November and December when the revolt against an increased retail price was going on, sales decreased 235,000 cans, making an increased surplus of 270,000 cans, for which the producers received butter value, — 14.91 cents per can in October, 16.43 cents in November and 17.52 cents in December.

The butter value of milk per can for 1900 was : —

	Cents.		Cents.
January,	19.34	July,	13.59
February,	18.00	August,	14.70
March,	17.93	September,	15.19
April,	13.22	October,	14.91
May,	13.95	November,	16.43
June,	13.50	December,	17.52

The Legislature of last year reduced the minimum fine for the first offence of selling milk not of standard quality. This was contrary to the best judgment of those engaged in enforcing the law, who believed that any letting down of

the bars would be no advantage to the milk business. The bars have been let down, however, with an emphasis in many cases, courts imposing a penalty of five, ten or twenty-five dollars, where formerly fifty dollars was the minimum fine. This shows a wide range between the judgment of the framers of the old law and of some of the district judges. But there is one advantage in the change: it is now much easier to get a record of a first offence, as a small fine is paid with less fighting and less appealing than a larger one.

EDUCATIONAL.

The educational portion of our work has been less during 1900 than during some previous years, for financial reasons. The general agent has responded to nineteen calls, involving the preparation of several papers. In the early history of the Bureau the Babcock milk tester was a novelty, and much work was done in familiarizing the dairymen of the State with its use by exhibiting it at institutes and making public tests of milk. Now that this, one of the most important products of the nineteenth century, is no longer a novelty, but has become one of the regular and indispensable appliances on hundreds of farms, this class of calls has grown fewer. Some work has been done in making milk dealers acquainted with the story the Babcock tester tells them. Fat being the variable element in milk, a test of the fat of normal milk will throw much light on the amount of total solids and of the standing of the sample tested in relation to the statute standard. One institute has been held during the year under the auspices of the Bureau; this was in connection with the Springfield Milk Dealers' Association. The food value of milk was the leading topic of the meeting, and a synopsis of some of the statements made at the meeting has been published as a Bureau bulletin.

The general agent of the Bureau is on call to address as many meetings as his other engagements will permit; especially would he be pleased to explain the work of the Bureau and what it is doing, thus bringing it into closer touch with the farmers of the State. The members of the Bureau will also respond to similar calls.

In view of the large milk-consuming interests of the

State, we have in previous reports called attention to the good which might be accomplished by some system of inspection of dairies, which would not be burdensome, and which would be helpful and educational, without any arbitrary or unpleasant features. We still hold to these suggestions, previously expressed. The general agent of the Bureau has been again called upon to award the dairy sweepstakes for the Worcester South Agricultural Society.

Laws may be enacted creating misdemeanors and imposing penalties, but real progress must rest on educational work as a basis. A law in advance of or in conflict with the average intelligence of a considerable portion of the people is a dead letter. Consequently this division of the work of the Bureau is very important, and deserving more attention.

MASSACHUSETTS COURTS.

We desire to say one word in commendation of some features of the Massachusetts system of criminal courts, particularly the local district and police courts. In many States the dairy commissioner, or other officer entrusted with the enforcement of the dairy laws, on securing evidence of violation of law turns the case over to the public prosecutor (State or district attorney), and the case gets into court only on a grand jury indictment. In Massachusetts all cases are first tried in the local court, being prosecuted by the department bringing the complaint. These cases go direct to the superior court if appealed. Only appealed cases are prosecuted by the district attorney, and even then, under our Massachusetts custom, the administrative head of the department where the cases originate follows them up and is of material assistance to the district attorney, not only in laying before him the evidence in the case, but in bringing to his attention the points raised in the lower court and the result of experience in other counties. All this tends to promote the efficiency of the enforcement of the law in Massachusetts. In Pennsylvania, for instance, where there has been some public criticism of the administration of the office of dairy commissioner, his defence was that his work had been faithfully done, but that for any failure to bring the parties into court the district

attorney was responsible. The commissioner says, in his last report: "The commissioner, or his attorneys, have no more power over the case at this stage of proceeding than any other citizen. All that they can do is to wait the pleasure of the district attorney and the court. If these officers decline to bring the cases before the grand jury and list them for trial, the prosecution has no remedy. They are effectually blocked as to any further progress. All of the cases that are now pending are in exactly this situation. They have been urged as far as the commissioner and his attorneys can prosecute them, and now it is simply a question of when the courts will take them up."

Another advantage of the Massachusetts system is that it gives the prosecuting officer a more thorough familiarity with every phase of his work than otherwise would be possible, and it gives him a breadth of experience such as is vouchsafed to few, if any, who hold similar positions in other States. Take, for instance, the past year: the experience of the general agent of the Bureau has included such an investigation of the methods and details of the imitation butter business as has culminated in 178 cases for court; it has also included the actual trial of those cases in the lower courts, and a very close touch with such as have been appealed to the superior courts. This exceptional breadth of experience is sometimes recognized in a way complimentary to the State by calls upon him to address meetings out of the State and to explain the work of the Bureau. Last summer he represented the State and its agricultural department with a paper at the Farmers' National Congress at Colorado Springs (at his own expense). Later he was given an honorable place on the programme at the national convention of dairy and food departments of the different States, held at Milwaukee, Wis. He was also emphatically urged to appear before the committee on agriculture of the National Senate, at a hearing on the Grout bill, to give some account of the experiences of the Dairy Bureau in enforcing the imitation butter laws of Massachusetts. These invitations he was unable to accept, on account of other duties. We believe that it is well for the Commonwealth to be represented occasionally, within reasonable limits and when funds allow,

at national gatherings. It not only gives the Commonwealth a recognition and standing among other States, but an interchange of ideas and acquaintance with others doing similar work promotes the general efficiency of the cause. Massachusetts already stands high among other States in the matter of dairy legislation. Since the Plumley decision, which was so largely due to the great ability and skill of former Attorney-General Hon. A. E. Pillsbury, between twenty-five and thirty States have patterned after our anti-color law; California has a Dairy Bureau; and now Maine is contemplating organizing a Dairy Bureau of its Board of Agriculture, patterned after the Massachusetts Bureau. In addition to the above calls out of the State, the general agent of the Bureau has, as a representative of the department, addressed the Vermont Dairymen's Association and a dairy conference of the Maine Board of Agriculture.

FINANCIAL.

The following is a classified statement of the expenses of the year:—

Members of the Bureau, travelling and per diem for attending meetings,	\$262 94
Educational work,	136 27
Inspectors' salaries,	1,632 00
Inspectors' expenses,	2,444 96
Chemists,	1,664 60
Geo. M. Whitaker, travelling expenses, postage, express, telegrams, etc.,	797 92
Printing and supplies,	61 31
	<hr/>
	\$7,000 00

GEORGE M. WHITAKER,
General Agent.

Accepted and adopted as the report of the Dairy Bureau.

J. LEWIS ELLSWORTH.
CARLTON D. RICHARDSON.
FRED W. SARGENT.

2157
1901
8
PUBLIC DOCUMENT

. . . . No. 60.

ELEVENTH ANNUAL REPORT

OF THE

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 15, 1902.



BOSTON :

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
18 POST OFFICE SQUARE.

1902.

ELEVENTH ANNUAL REPORT

OF THE

Mass:

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 15, 1902.



BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,

18 POST OFFICE SQUARE.

1902.

614.32/M3

2132

1901

B

DAIRY BUREAU—1901-1902.

J. L. ELLSWORTH, WORCESTER, *Chairman.*

C. D. RICHARDSON, WEST BROOKFIELD.

F. W. SARGENT, AMESBURY.

Secretary.

J. W. STOCKWELL, *Executive Officer and Secretary of the State
Board of Agriculture.*

General Agent.

GEO. M. WHITAKER, BOSTON.

REPORT.

The membership of the Bureau has remained unchanged during the past year. The administrative work has continued in the same hands as heretofore. This officer the past year concluded ten years' service in the work of the Bureau; the present report, however, is the eleventh, because the Bureau began its existence in September, and the first report was for part of a year, — the last four months of 1891. No new chemists or regular inspectors have been engaged during the year. As previously reported, special inspectors are employed temporarily from time to time in emergencies, when a face unfamiliar to the dealers in counterfeit or adulterated products is needed.

The past year has been a record breaker, as far as tangible or reportable results is concerned. We have more to show in evidence secured, in court cases and in educational work than has been accomplished in any previous year of the Bureau's history. But we do not speak of this in a boastful spirit, or with unalloyed satisfaction. The fact that we have secured an unusual amount of evidence of law breaking presupposes the *existence* of an unusual amount of law breaking, and that is not pleasing to contemplate. Just as faithful work was accomplished, we have every reason to believe, in 1897, when we had only 27 cases in court, as in 1901, when we had 252. The conditions would be more satisfactory in a broad way if there was such a law-abiding spirit in the community, or if the law had such a deterrent effect, that efficient inspection could find no evidence on which to put cases into court for prosecution. But under prevailing conditions, when the love of unjust gain leads grasping men to push the sales of dishonest products, we feel some satisfaction at what we have accomplished by way of punishing such acts. We are sorry to add that the desire to sell fraudulent products is such that we could have done much more, and

beaten our own record, large as it is, were it not for one thing, and that is, the lack of money. The greatest hindrance to our work has been our limited appropriation. It costs money to get evidence and to prosecute cases. The amount of effort we can put out in the interests of honest food products is governed by the amount of money at our disposal. We are public servants; does the public want us to do more in the future than we have done in the past, — then we must have more to do with. Bricks cannot be made without straw. The possibility of getting 80 to 100 per cent. profit out of the consuming class by the dishonest sale of certain food imitations is a constant stimulus to push the dishonest business. Is it desired that we should be able to meet the increasing efforts in this direction? We could use \$3,000 more to excellent advantage in the interests of pure and honest dairy products.

Statistically, our work for the past year may be summarized as follows : —

Inspection of places in which dairy products or their imitations were sold or stored, but where the law seemed to be complied with, and no samples were taken,	1,757
Samples taken, real or imitation butter,	721
Samples taken, milk or cream,	189
Samples taken, cheese,	1
Cases in court,	252
Meetings addressed,	20

This is 145 more inspections, 85 more samples taken and 74 more cases in court than the previous year. In court cases we reported that 1900 was a record breaker, with 178. The past year we exceeded that figure, as stated above, by 74.

The court cases were brought under the following laws : —

Imitation butter, anti-color law,	88
Imitation butter, hotel-restaurant law,	127
	— 215
Milk, adulterated,	10
Milk, under standard,	20
	— 30
Obstructing an officer,	6
Assault and battery,	1
	—
Total,	252

The cases in court resulted as follows : —

Convictions,	218
Acquittals,	17
Defaulted,	2
Nol pros,	15
	—
Total,	252

This is almost 1 case a day for each working day. It is no inconsiderable task to receive and pass upon the evidence in 252 cases, to make the complaints, to take charge of the cases in the district and police courts, to keep track of such as are appealed, to follow them into the superior court, and to do the necessary incident clerical work.

BUTTER, — NORMAL.

The butter market has been in a fairly healthy condition during the past year. The creameries of the State have, on the whole, done a satisfactory business, though producers have been hampered by an increased cost of production, owing to the higher cost of grain. The following table shows the extreme quotation for the best fresh creamery butter in a strictly wholesale way in the Boston market for the last six years : —

	1901. Cents.	1900. Cents.	1899. Cents.	1898. Cents.	1897. Cents.	1896. Cents.
January,	25.0	29.5	21.0	22.5	22.0	26.0
February,	25.0	26.0	24.0	21.5	22.0	24.0
March,	23.0	27.0	22.5	22.0	23.0	24.0
April,	22.0	21.0	21.0	22.5	22.0	22.0
May,	19.5	20.5	19.0	18.0	18.0	17.0
June,	20.0	20.5	19.0	17.5	16.0	16.5
July,	20.0	20.5	19.0	18.5	16.5	16.5
August,	21.0	22.5	21.5	19.5	19.0	17.5
September,	22.0	22.5	23.5	21.0	22.0	17.5
October,	21.5	22.0	24.0	21.5	22.5	20.0
November,	24.0	25.0	26.5	21.0	22.0	21.0
December,	24.5	25.5	28.0	21.0	23.0	23.0
Averages,	22.3	23.5	22.4	20.5	20.6	20.4

The above does not show quite as high an average for 1901 as for 1900, but the figures for the past year were better than

the average for recent years. The Boston market is the only one in the State where statistics are kept, and as Boston is the largest city in the State, and as it is the commercial centre of New England, figures from that market have an exceptional interest.

The Chamber of Commerce figures regarding the butter business in Boston for 1901 and the immediately preceding years are as follows : —

	1901. Pounds.	1900. Pounds.	1899. Pounds.	1898. Pounds.	1897. Pounds.
On hand January 1, . .	3,285,960	2,073,800	2,829,160	2,473,600	2,898,000
Receipts for the year, . .	57,499,836	51,502,840	49,757,606	50,609,552	51,107,033
Total supply, . .	60,785,796	53,576,640	52,586,766	53,083,152	54,005,033
Exports, deduct, . .	5,708,603	1,002,374	3,051,710	1,574,682	3,286,333
Net supply, . .	55,077,193	52,574,266	49,535,056	51,508,470	50,718,700
Stock on hand December 31, deduct,	4,512,000	3,285,960	2,073,800	2,829,160	2,620,680
Consumption, . .	50,565,193	49,288,306	47,461,256	48,679,310	48,098,020

The above table shows a steadily increasing consumption, barring the year 1899. This was the year when prices improved after the depression of three preceding years, and it is possible that the consumers had not adapted themselves to the changing rates. In connection with these figures one fact must be remembered: with the development of other centres in New England, and their securing from the railroads Boston freight rates, Boston loses its relative supremacy as a New England distributing centre; therefore, these annual figures mean more and more the local consumption. With this fact in mind, the steadily increasing consumption is very gratifying.

BUTTER, — IMITATION.

On a previous page we report 88 court cases for violation of the anti-color law and 125 for violation of the hotel-restaurant law. In the enforcement of these laws there also arose 6 cases of obstruction of an inspector of the Bureau, and 1 of assault and battery on an inspector. This makes 222 cases in connection with the oleomargarine — imitation-

butter—laws. Of this number, we lost 17 and not crossed 15, 2 were defaulted and there were 186 convictions. Besides these, 3 cases have been taken from the files of different courts and fines imposed, in instances where the defendant had broken his parole and been convicted of subsequent offences. Evidence of violation of the anti-color law is obtained, when possible, by making purchases in stores or of peddlers. Often this cannot be done, because our inspectors are known to the dealer, who will refuse to make a sale; or it may be that he is so suspicious that he will not sell to any stranger. If a purchase cannot be made, the inspector searches the suspected premises, and if any of the imitation article is found, we have a *prima facie* case of intent to sell, which is also prohibited by the statutes. In view of the fact that we cannot depend on the first kind of evidence, but must frequently fall back on the second, our statistics do not prove conclusively how this imitation product is ordinarily sold in the usual channels of trade: that is, we cannot show what the average consumer orders and supposes he is getting. But out of the above 88 violations of the law we had positive evidence in 56 cases that sales of the imitation had been made as and for genuine butter. In other words, we can prove that, out of 88 cases where possession with intent to sell was alleged, we had evidence in 64 per cent. of the cases that a fraud had been actually committed. These figures are certainly no exaggeration. If they err at all, it is on the side of conservatism. It is evident that, if they are faulty, it is in understating the facts. But on the basis of the above figures, which are absolutely accurate, 64 per cent. of the imitation butter manufactured is sold dishonestly. When to this fact is added the further fact that the sales were made at prices varying from 20 to 26 cents per pound, we find a vindication of these laws. Though criticised by some and misunderstood by others, they are for the protection of consumer, producer and honest middleman. Every class in the community is interested in honest foods, and these laws are for the benefit of all. No honest product is discriminated against.

During the year we have found the law violated in an unusual number of hotels and restaurants. In many instances the proprietors or managers were innocent of any attempt to deceive; they were themselves deceived by the person of whom they purchased their supplies; they ordered butter, paid a butter price for what they bought, and supposed they were serving butter. In 12 instances the defendants testified to such facts; but in many others the same information came to us informally, but the defendants were found guilty in court, and the fines paid, under circumstances that made us feel certain that the dealer had stood back of his customer, and paid the fine and expenses. As the fine for selling imitation butter is \$100, while the fine for serving it in a restaurant is only \$10, it is self-evident that the dealer could well afford to hush up in this way any evidence of his own moral obliquity. In one case the attorney of a dealer boldly stood up in court and defended the restaurant manager without having been employed by the latter, in order to use legal skill in suppressing the evidence against the dealer aforesaid.

For the first time in the history of anti-color legislation in this State a violator of the law has been sentenced to imprisonment, and is serving his sentence. The defendant was a persistent seller of colored oleomargarine, which he disposed of as and for butter. He paid a fine in Springfield; he was detected selling the article in Worcester, but ran away; he was found backing another dealer in Holyoke and Chicopee; and finally he was caught peddling in Brockton. He represented himself as agent of the St. Albans creamery, and said its superior product could be obtained only of him. His price was 24 cents per pound. He was a good salesman, and by going from house to house and telling this story he could sell many five-pound boxes in a day, with the minimum risk of detection. But we secured the facts, and put him into the Brockton police court on three complaints. It was his expectation that the usual fine of \$100 would be imposed, which fine he was prepared to pay. Doubtless after charging it off to expense he could show a balance on the right side of the account. He was,

however, thunderstruck at the sentence, and ejaculated in open court, "Such a sentence was never imposed before in this State, your Honor." "Well, it has been done now," replied the judge. It seems to us that it would be well, in the cases of a few other inveterate offenders, if a similar course might be followed by some other judges. Indeed, we are not sure but the law would be more deterrent if the statute required imprisonment for the third or fourth offence. If such a change were made, it might be policy to reduce the penalty for the first offence, so that the law might not seem oppressive, and might act as a warning to the careless or ignorant the first time a person is caught violating its provisions.

In order that the law may seem more forceful in the case of old offenders, we have adopted the policy of multiplying cases against them when we can do so. Otherwise we have feared that the operation of the law might be regarded more as a license than a punishment. If it is impossible for us to reach leading cities and towns in the Commonwealth oftener than once a year, an occasional fine of \$100 might come to be regarded as a part of the regular programme, to be a fixed charge on the business. For this reason we brought 6 cases against one New Bedford dealer, and secured convictions in all, the fines amounting to \$600; a Holyoke dealer has paid 3 fines of \$100 each; 8 convictions were secured against one store in North Adams, with fines aggregating \$900; one of the old offenders of Lowell has been found guilty in 4 cases, the fines amounting to \$400; 5 cases were accumulated against one Worcester store, with fines of \$500; 4 against another; and 3 against still another. Such procedure is not possible in all cases, but we believe it is advisable when it can be done.

One case is still pending in the supreme court. This arises out of the custom of district court clerks receiving complaints and issuing warrants in the name of the court, when no judge is present. Clerks are by statute allowed to receive complaints and issue warrants, but this question grows out of their acting under such circumstances in the name of the court. It is claimed that if by virtue of his

office a clerk receives a complaint, he should issue his own warrant and not the warrant of the court; in the latter case it is claimed that the warrant is issued before the complaint is received by the authority issuing the warrant. A large number of appealed cases are tied up, awaiting this decision.

In the perjury case alluded to in our report of last year the defendant was found guilty and sentenced to a term of imprisonment, which he is now serving.

BUTTER, — RENOVATED.

The law requiring renovated butter to be branded or labelled with its distinctive name is largely a dead letter. This is through no difficulty in enforcing the law, for chemists can easily distinguish renovated butter from normal butter and from imitation butter. The difficulty is wholly with the amount of money which the Legislature allows us to expend. This amount is not enough even to permit us to do as thoroughly as we would like the work entrusted to us before the renovated butter law was enacted. The milk inspector of Lowell has had one case which has been pushed to a satisfactory conclusion in district and superior court; so far as we know, this is the only case that has been tried.

As to the desirability of such a law, opinions differ. The wholesalers generally view it with disfavor, and will ask the Legislature to repeal it. This renovated butter question is rapidly increasing in importance, for the commodity is becoming a staple article of merchandise, and is coming into general use. Almost every store has it, and it has become an important article in the trade. For a second-quality butter it has much to commend it, and it is much better than could be secured as such before the process of butter renovating became common. If it were sold under its true colors, — and that is all the law requires, — it would be a valuable article of commerce. Renovation is always commendable, whether in butter or human beings. Improvement is progress. To take low-grade butter, which would be almost unmerchantable, and renovate it so that it will stand almost in the front rank is a praiseworthy act. But experience and

observation covering the retail markets of the whole State, including those selling from both stores and wagons, convince us that in many instances the consumer does not know what he is buying, and the article is sold dishonestly. When any inferior article is thus sold dishonestly as something better than it is, it becomes a damage to legitimate business.

We believe that renovated butter, as it is ordinarily sold, is a menace to the business in natural butter. Notice that we use the word “natural” butter, in distinction from “renovated” butter. Renovated butter is unquestionably the real product of the cow’s udder, without adulteration, generally speaking (a little glucose is sometimes added, to give it body or grain); but the process of renovation so changes the substance that, though it still remains real butter, it is no longer natural butter. It boils like oleomargarine, rather than natural butter; it appears under the polariscope more like oleomargarine than natural butter; in some kinds of cooking it will not take the place of natural butter. Consequently, we claim that renovated butter is not natural butter. Though the wholesale trade, as stated above, almost unanimously oppose the use of a distinctive brand or label which shall apprise the consumer of its real character, there are those in the butter business who do not hesitate to say that as usually retailed it is as great a menace as unregulated oleomargarine would be. One dealer says that the trade is committing slow suicide in the course things are taking.

Here are some facts which we can substantiate. When the best creamery butter was quoted in assorted size tubs, in a strictly wholesale way, at 22 to 22½ cents per pound, a large Boston retailer advertised in a showy manner in the Sunday papers that he “owned creameries in the finest dairy sections of the country,” and could therefore sell direct to the consumer an article of “superb quality,” at a very low price. This dealer, having made this boast, thereupon offered “Locust Valley Elgin Creamery Butter” at 22 cents per pound in five-pound boxes, and at 21 cents per pound in tubs. A Bureau inspector purchased one of the five-pound boxes at 22 cents per pound, — less than the extreme wholesale price of butter in tubs in round lots, — and the stuff

proved on analysis to be renovated butter. Such things seem to us to be more of an injury to business than the single transaction between the seller and the individual buyer, for the quoting such a price in such a misleading way tends to unsettle values, to impair confidence and to injure producer and middleman. At the same time alluded to above another large retailer was advertising fine Vermont dairy butter at 22 cents per pound; our inspector bought some, and it proved to be renovated butter which probably never saw Vermont. In a suburban town a dealer sold his "best creamery butter" at 28 cents per pound to one of our inspectors, and this, too, proved to be renovated butter. A creamery manager in the western part of the State writes us: "Mr. — of this town advertises continuously 'Elgin creamery butter, 25 cents per pound.' This business ought to be stopped, for this figure is less than our wholesale price." We could multiply such statements almost indefinitely, but they would be merely cumulative.

We have endeavored to present fairly the position of both sides of the case. We have no personal interest in the matter, and regret that our convictions run counter to those of the trade and many personal friends who have stood loyally by the cause of honest butter in opposition to oleomargarine.

MILK.

The cost of production has greatly increased during the past year, particularly the latter portion, on account of the higher price of the grain fed to milch cows. This has resulted in movements in many places for an advanced price for milk. These agitations have generally been successful, and 7 cents seems to be the prevailing retail price, at least outside of Boston. There considerable milk is retailed at 8 cents, and in case of superior milk an extra figure is secured. In some instances farmers have become discouraged at the low or unprofitable price, and curtailed their production. The demand for milk has been very good, or at least until near the close of the year. It is yet too early to tell the lasting effect of higher prices upon the consumptive demand for milk. But milk at retail has not yet reached such a figure

as to take it out of the list of the cheapest foods one can purchase. When milk is 7 cents per quart, the dry, solid portion of average milk — every portion digestible, with no refuse — costs only 27 cents per pound. We think there is a steady gain in the quality of the milk retailed in the State. The literature circulated by the agricultural press and experiment stations is surely leading to improved and cleaner methods, better ways of caring for the product, and more attention to details which have an important bearing upon the quality of milk.

In the enforcement of the milk laws we have taken 189 samples of milk or cream, and had 30 cases in court on the following charges : —

Adulteration,	.	.	.	.	.	.	.	.	10
Under standard,	.	.	.	.	.	.	.	.	20
Total,	.	.	.	.	.	.	.	.	<u>30</u>

Conviction followed in each instance. The adulterant used in 8 of the cases was some coloring matter to give an appearance of richness, when a portion of the cream had been removed. In 2 instances the proportion of fat to solids not fat was such as to prove that water had unquestionably been used as the adulterant, and the charge was made accordingly. Under the law of 1900 judges have more latitude than formerly in the matter of fines when milk is not of standard quality, and the fines imposed in the above cases ranged from \$5 to \$100. Most of them were the lower figure, and the larger sum was an aggravated second offence. Under the old law, \$50 was the minimum in all such cases. The analysis of the milk in the cases prosecuted showed total solids as follows : —

10.90	11.40	11.50	11.24
11.54	11.90	11.40	11.20
12.50	10.66	11.10	8.70
12.10	11.64	9.70	10.50
10.06	11.20	11.28	10.60

With the increasing importance of the cream trade and the increasing amount of pasteurizing of cream, dairymen found a serious obstacle in their business. Pasteurizing

cream makes it more fluid, and hence less acceptable to people who have been educated to associate richness with thickness. It was impossible to convince them that a thin cream might have as much fat as a thick cream. As the increasing use of cream made it necessary to ship the article considerable distances, compelling pasteurization, the trouble threatened to become serious, until Professor Babcock came to the relief of the situation with the statement that viscogen (sugar of lime) added to cream in very small amounts would restore its viscosity without adding any deleterious feature. Consequently this practice has been adopted to a considerable extent, and has the sanction of the best dairy authorities in the country, though it is a violation of Massachusetts law, which forbids the addition of "any foreign substance." During the past year information has come to us of the use of this substance to promote dishonesty and to injure the trade in cream. A gentleman who was selling a 50 per cent. cream came in competition with an article which was claimed to be "just as good," but which was sold at a cut price. Samples were taken, and the competing cream was found to have only 30 per cent. of fat; but it was thickened with viscogen, so as to have the viscosity of the 50 per cent. article. An unfortunate feature of the business is the difficulty of determining the addition of this adulterant with sufficient certainty to maintain a case in court, lime being a natural ingredient of cream, and in variable amounts.

BOSTON MILK.

The situation in Boston has been of exceptional interest during the past year, and milk history has been made rapidly. As stated in a previous report, the wholesale price and the price to producers in October, 1900, advanced 4 cents per can over the winter price which had prevailed for four years, for the winter period of six months, at the city end of the line. The advance to consumers, with an unwise agitation, proved too much for the market, and on the 1st of January, 1901, the producers' price dropped 2 cents. This was the first time in the history of the trade, or at

least for many years, when there was a change in one of the six months' periods. The unusual nature of the situation at the beginning of the year was increased, when negotiations for the summer price began, by a demand on the part of the producers for an abolition of the time-honored practice as to the manner of computing the return to be made to the farmers for surplus milk. The wholesalers, contractors, had been in the habit of contracting for an indefinite quantity of milk at a fixed price, subject to the proviso that the farmers should be paid butter value for the surplus. This provision on the contractors' cards we find for the first time in September, 1886. Consequently, if Farmer A was to have 26 cents per can, and he shipped to market 1,000 cans of milk in a month when the butter value of milk was 15 cents per can, and the surplus was 25 per cent. of the receipts, his account would be accurately figured thus : —

750 cans of milk, at 26 cents per can, . . .	\$195.00
250 cans of milk, at 15 cents per can (butter value),	37.50
	<hr/>
Total,	\$232.50

But the contractors reached this conclusion in a different way for their convenience in keeping their accounts. They first computed the average price per can for the month, which in the above case it will be seen was 23.25 cents per can ; this figure being 2.75 cents less than the regular price, the farmer's account would be made up by the contractors as follows : —

1,000 cans of milk, at 26 cents per can, . . .	\$260.00
Discount for surplus,	27.50
	<hr/>
Balance due,	\$232.50

The farmer got the same amount of money by each way of making the computation, but the contractors' method was blind, putting a premium on misunderstanding, and being a direct bid for confusion and trouble. An apparently arbitrary discount, misunderstood and obscure, naturally was a source of great irritation, and for years it was the frequent theme for discussion at milk meetings. This surplus was

most burdensome in 1897, when it reached the immense proportions of 3,059,619 cans, nearly 35 per cent. of the sales. Since then it has been decreasing, and had fallen off to 1,632,146 cans in 1900. But in March of 1901 a formal demand was made by the Milk Producers Union for an abolition of the surplus provision, and for a "straight price," that is, one price for all milk sold to the contractors, so that the producer would know, when the milk left his dairy, exactly what he would receive for it. The contractors resisted this demand, and a milk "strike" followed. The farmers held together with great unanimity and praiseworthy harmony, keeping back a large proportion of the city's milk supply. But the contractors reached out farther, into adjoining States, and secured so much milk that the consumer would not know, except from the newspapers, that there was any disturbance in the market. At length the power of negotiation prevailed, and a compromise was arranged, by which those who wanted a "straight price" secured it by agreeing on a deduction for surplus, as explained above, of 2 cents per can.

At the time for making the trade for the winter price of 1901-2 the average price of last winter was fixed upon, with the agreement that the discount for the surplus for the next six months should be determined in advance to be 1½ cents per can. There were further agreements looking to a more even supply and guarding the producers if the actual surplus should fall below the prearranged discount. On account of the shortage of milk, which promised to be serious on account of the increasing cost of production, the contractors voluntarily raised the price 4 cents per can in December, and the increase is to continue through January. The following table shows the wholesale price of milk in Boston for twenty years. The price that the farmer received has been a fixed discount from this, varying according to the distance from Boston. We have included in the table the price which the producer in the middle belt has received during this time, the price being what he has received for all milk consumed as such in Boston, and not the average income of his dairy when both sale milk and butter

value of surplus are considered and averaged. The figures are for 8½ quart cans.

YEAR.	Summer Boston Price, — April to October (Cents).	Net to Producer in Fifth Zone (Cents).	YEAR.	Winter Boston Price, — October to April (Cents).	Net to Producer in Fifth Zone (Cents).
1882, .	35	—	1882-3, .	43	—
1883, .	35	—	1883-4, .	40	—
1884, .	34	—	1884-5, .	42	—
1885, .	30-32	—	1885-6, .	36-37	—
1886, .	30	—	1886-7, .	36	—
1887, .	30	—	1887-8, .	36	24
1888, .	32	21	1888-9, .	38	27
1889, .	32	21	1889-90, .	38	25
1890, .	32	21	1890-1, .	36	25
1891, .	33	22	1891-2, .	37	26
1892, .	33	22	1892-3, .	37	26
1893, .	33	22	1893-4, .	37	26
1894, .	33	22	1894-5, .	37	26
1895, .	33	22	1895-6, .	37	26
1896, .	33	22	1896-7, .	35	24
1897, .	31*	22	1897-8, .	33*	24
1898, .	31	22	1898-9, .	33	24
1899, .	31	22	1899-0, .	33	24
1900, .	33	24	1900-1, .	{ 37 to Jan. 35	28 to Jan. 26
1901, .	33†	24	1901-2, .	{ 36‡ 40 in Dec.	25.5‡ 29.5 in Dec.

* This is a nominal rather than an actual change. With the dropping of the Boston price 2 cents the distance discount-schedule was also lowered 2 cents, so that producers received the same price.

† Those producers who preferred had 31 cents, with no discount on account of the surplus.

‡ In the trade with the contractors a surplus discount of 1.5 cents was agreed upon; 25.5 is the net to the farmer after the surplus discount is deducted, and is equivalent to 27 cents, from the standpoint of the preceding figures.

The following table gives the receipts, sales and surplus of railroad milk brought into greater Boston, in 8½ quart cans, as reported by the contractors' association : —

1901.	Receipts.	Sales.	Surplus.
January,	802,346	701,026	101,320
February,	728,076	637,968	90,108
March,	867,095	733,817	133,278
April,	543,164	439,471	103,693
May,	972,067	743,962	228,105
June,	1,019,722	746,889	272,833
July,	941,652	796,560	145,092
August,	856,878	728,592	128,286
September,	813,127	734,253	78,874
October,	846,368	768,461	77,907
November,	739,101	712,974	26,127
December,	756,707	712,164	44,543
Totals,	9,886,303	8,456,137	1,430,166

	Receipts.	Sales.	Surplus.
1900,	10,607,684	8,975,538	1,632,146
1899,	11,234,764	8,911,971	2,322,793
1898,	11,317,761	8,564,682	2,753,079
1897,	11,798,191	8,738,572	3,059,619
1896,	10,772,108	8,087,378	2,684,730
1895,	9,856,500	8,040,732	1,815,768
1894,	9,705,447	7,657,421	2,048,026
1893,	9,263,487	7,619,722	1,643,765
1892,	9,212,667	7,315,135	1,897,532

The record of receipts has shown a steady decline since 1897, which is not a wholly undesirable condition, as consumption has held its own, or increased. Hence the smaller

amount of receipts means a great reduction in the surplus. The receipts for 1901 were the smallest in six years, the surplus was the smallest for ten years. The receipts have run uniformly less during each month of the year, but the sales have been very uneven relatively from month to month; one month they would be less than the average, or the smallest for several years, while the next month they would be the largest on record, with perhaps a single exception. The purchase of milk by the large wholesalers has not kept pace with the increase of population.

The butter value of milk in cents per can for 1900 and 1901 was: —

	1901.	1900.		1901.	1900.
January, . . .	16.20	19.34	July, . . .	13.87	13.59
February, . . .	16.60	18.00	August, . . .	14.47	14.70
March, . . .	16.85	17.93	September, . . .	14.53	15.19
April, . . .	14.62	13.22	October, . . .	14.92	14.91
May, . . .	13.05	13.95	November, . . .	15.94	16.43
June, . . .	13.78	13.50	December, . . .	16.88	17.52

MILK IN OTHER CITIES.

A number of milk inspectors have kindly furnished us some information about the milk business in their several cities, from which we compile the following: —

Somerville: population, 61,643; consumption of milk, 21,400 quarts per day; trade fully as good as last year.

Lowell: population, 94,966; consumption of milk, 30,268 quarts daily; about one-third is sold to boarding houses and stores at wholesale; nearly all is sold by middlemen; there is a tendency to take better care of milk brought into the city.

New Bedford: population, 62,442; consumption of milk, 27,000 quarts per day; about one-third is retailed by producers; the quality is generally very good.

Cambridge: population, 91,886; consumption of milk, 36,344 quarts per day; about one-half is sold from stores

and one-half from wagons; 224 cans daily are raised in Cambridge, and 504 cans are sold by producers; wagon milk comes in from Waltham, Lexington, Arlington, Belmont, Concord, Lincoln, Wayland, Burlington, Dover, South Sudbury, Bedford, Holliston, Billerica, Needham, Sharon and Southborough; there is a tendency on the part of the big contractors to absorb the retail routes; condensed milk has lately replaced fresh milk to some extent.

Worcester: population, 118,421; consumption of milk, 34,000 quarts daily; 61 per cent. of the dealers are middlemen.

Lawrence: population, 62,559; daily consumption of milk, 24,000 quarts; about 40 per cent. is sold by producers; the quality is improving.

Lynn: population, 68,513; daily consumption of milk, 22,950 quarts; about two-fifths is retailed by the producers; there is a tendency to concentration among the dealers.

Holyoke: population, 45,712; consumption of milk daily, 17,500 quarts; a large proportion is sold by non-producers; the quality is improving.

Some years ago, in some figures for the national department of agriculture, the writer of this report endeavored to ascertain whether there was any law of average underlying the consumption of milk in the larger cities of New England, with the following result (the figures represent hundredths of a pint per capita of population):—

Boston,	. . . . .	.96
Hartford,	. . . . .	.94
Nashua,	. . . . .	.84
Burlington,	. . . . .	1.00
Haverhill,	. . . . .	.90

The following is deduced from the above figures from Massachusetts cities:—

Somerville,	. . . . .	.69
Lowell,	. . . . .	.63
New Bedford,	. . . . .	.86
Cambridge,	. . . . .	.79
Worcester,	. . . . .	.57
Lawrence,	. . . . .	.76
Lynn,	. . . . .	.67
Holyoke,	. . . . .	.77

EDUCATIONAL.

The educational work of this department has not been neglected during the past year. Six meetings have been addressed by members of the Bureau, and the general agent has been called upon fourteen times for addresses. There have been three calls on him for Babcock test demonstrations before audiences; but the test is now so well known that this class of calls is less than formerly. There have been three calls for the use of this test on other occasions. One of these was the awarding the sweepstakes dairy prize of the Worcester South Agricultural Society. The general agent has acted as judge of this class for the society for a number of years.

CODIFICATION OF DAIRY LAWS.

The dairy laws of this State have been a growth. Almost every year since 1856 there have been amendments and new legislation, and in some instances the practice under these laws has been modified by court decisions. Hence the dairy laws needed codification and revision more perhaps than the laws in any other department. Revision, however, was beyond the scope of the work undertaken by the recent commission and the Legislature of last year but the codification has resulted in great improvement.

Owing to the somewhat complicated nature of the case, the work left the codification commission with a few serious errors; for example, the selling of milk not of standard quality was not prohibited, two standards for skimmed milk were created, and a law relative to duplicate samples (declared by the supreme court as repealed by implication) was continued. At the request of the sub-committee of the Legislature having the matter in charge, the general agent of the Bureau met with them several times and gave much attention to this work. As a result of their efforts, all serious defects were remedied, and the codification seemed perfect. But in the final copying and renumbering of sections a few relatively unimportant errors crept in. The attention of the legislative sub-committee was called to these, but they

replied: "We deemed it wise not to offer any of the amendments. The Legislature seemed bound not to make any changes whatever except where the change was necessary on account of some provision of law which would be made in-operative unless the change was made."

These errors are three. Section 42, relative to complaints to be instituted by inspectors of milk, omits allusion to the renovated butter law. Section 61, which imposes a penalty for milk inspectors conniving at or assisting in a violation of the provisions of several sections, includes in the list section 70, which relates to the inspection of meat and provisions. Section 64 orders milk inspectors to make complaints on information as to the violation of several laws, and includes those requiring the Hatch experiment station to inspect Babcock testers and the glassware connected therewith.

The codification has improved the phraseology of the laws in several respects, particularly in a general definition of butter and oleomargarine, which saves several verbose repetitions. The commission and the committee saw several places where the laws could be still further improved, but most of these changes seem to border on new legislation, and were therefore debarred. One change seems to us to be required. Some of the fines go to the Commonwealth, and some go to the cities or towns where the offence is committed. There is no reason for such lack of uniformity, which introduces an element of confusion, and sometimes occasions trouble. It would be much better, both in theory and practice, if all the fines arising under these laws were disposed of uniformly. We recommend that all take the same course, and go to the cities or towns where the offence is committed, as is the case with the greater portion of the fines for other offences.

The codification makes a change in the spirit of and practice under one law. Chapter 169, Acts of 1899, directed an officer who obtained a sample of milk for analysis to send, within ten days of the "procurement thereof," the result of the analysis to the person from whom the sample was taken. In the opinion of the Attorney-General and the codification

commission, the words “procurement thereof” referred to the nearest noun, to wit, analysis; hence the Revised Law (section 63) requires the person who obtains the sample to send the prescribed notice “within ten days after obtaining the result of the analysis” from the chemist.

NATIONAL ASSOCIATION. — MASSACHUSETTS COURTS.

In October the general agent of the Bureau attended the annual Convention of Dairy and Food Commissioners at Buffalo. He read a paper on the practical enforcement of food laws. The paper showed that the enforcement of these laws is sometimes criticised from the theoretical stand-point by persons without knowledge of ordinary procedure under criminal laws, and without experience. The theoretical critic seems to regard these laws like an automatic machine, which moves with the relentless precision of the buzz saw or pile driver. But the practical enforcement of food laws varies much from the inexorable blow of the inanimate machine, because of (1) the limitations and demands of the laws of evidence, (2) the personal element in judges and jurors, (3) the discretion allowed prosecuting officers, whether agents of food departments or district attorneys. This difference between the practical and theoretical enforcement of criminal laws in general and food laws in particular is not a weakness, when broadly considered. The defendant has the benefit of every precaution to prevent the innocent being unjustly condemned; and when conviction is secured, justice can be tempered with mercy. We believe the laws have more respect from the community at large, and even from the criminal classes, on account of the human element that comes in play, from the fact that decisions are reached by men with the traits of a common human nature.

These meetings with officers engaged in similar work in other States are always beneficial, and at times exceedingly interesting. One effect is to impress us with the superiority of the Massachusetts system of courts, and the way in which the system works. We believe one may justly take pride in the same. The form of our procedure, the high character of our judges even in the lower courts, and the tone of pub-

lic sentiment here, are more highly appreciated after one has had an opportunity to learn the troubles of those engaged in similar work elsewhere. Imagine the only way to begin criminal proceedings to be through the grand juror or the grand jury ; imagine grand jurors appointed by selectmen or aldermen, and reflecting the views of the appointing power ; imagine cases smothered by a district attorney, because he does not favor some law ; imagine the frequent failure of grand juries to indict, in spite of evidence, if they do not like any particular law ; imagine one grand jury at a single session refusing to find bills in 300 cases of violation of a law unpopular with the jurors ; imagine petit jurors being judges of law, as well as of evidence, and refusing to convict because in their judgment some law is unconstitutional ; imagine being obliged to begin civil suits to collect fines after the criminal court has imposed them, — all these things happen in other States, not all in any one State. On one occasion the writer of this told a group of commissioners in the course of conversation that in Massachusetts it is no unusual thing for a judge to charge a jury that their opinions as to the merit of the law should not be a factor in the conclusion they might reach ; that their duty was merely to determine whether the evidence in the case bore out the charge in the complaint. More than one commissioner expressed surprise at the statement, and said that judges in his State would not do so.

MISCELLANEOUS.

In many instances our inspector is the only witness to the violation of law, and sometimes his evidence in court is disputed by the defendant. There is then the word of one man against that of another. In such circumstances the witnesses are usually sharply cross-examined, with a view of getting at the facts in the case, to determine as far as may be the truth of their stories. To illustrate : During the year an inspector found an imitation-butter pedler in Lawrence with some of the contraband article in his wagon. The inspector started to take a portion for analysis, but he was forcibly prevented from securing the sample. The pedler was brought before the police court, charged with interfering

with an officer of the Dairy Bureau. At the trial of the case the inspector told his story, and the defendant denied substantially every material portion of the inspector's evidence. The inspector was cross-examined by the defendant's lawyer, and the defendant was examined by the general agent of the Bureau, the judge himself asking several questions. As a result of this careful investigation, the fellow was found guilty and fined. He appealed, and in the superior court there was the same conflict of evidence and a similar cross-examination of witnesses by the defendant's lawyer and the district attorney. As a result of this sifting of the varying stories, the jury believed that the man was guilty, and so found. Now, Judge Berry of the Lynn police court interprets the law of evidence as requiring him to acquit a defendant against whom there is only one witness, if the defendant denies or even questions the story of that witness. This judge, therefore, says that, if we are to be allowed to swear out complaints in his court, we must duplicate our evidence, — have our inspectors travel in pairs, so that the story of one may be corroborated by the story of the other. If this is good law, the practice will eventually be adopted by the other courts and will result in halving the amount of work we can do, or will require double the present appropriation, if the present degree of efficiency is to be maintained.

As the work of the Bureau continues, the increasing experience of the official in charge causes the calls upon him to grow broader in their scope. He has been for a number of years a lecturer on dairy topics before one of the schools of domestic science in the city. In January he was sent to Washington by the butter men of the Boston Chamber of Commerce, in the interests of the Grout bill, so called. This bill is of much interest to Massachusetts, as it will make its policy as regards imitation-butter legislation in harmony with the Constitution by act of Congress rather than by the divided opinion of the supreme court. The Bureau's general agent, as the representative of the dairy interests of the State, has been placed on the board of officers of the National Farmer's Congress and also of the Na-

tional Association of Dairy and Food Commissioners. In August he was appointed a special expert of the national department of agriculture, to inspect dairy exports from the port of Boston in connection with recent national legislation. The duties of the position will not be very large, as Boston is not much of an export point for dairy products, and as most of what exports there are come from the west on through bills of lading, and are transferred directly from the cars to the boats. We expect that in a general way being in closer touch with the dairy business will be in the line of increased efficiency in work for the State.

The following is a classified statement of the expenses of the year : —

Members of the Bureau, travelling and per diem for attending meetings,	\$297 56
Educational work,	103 86
Inspectors' salaries,	1,775 35
Inspectors' expenses,	2,414 39
Chemists,	1,650 36
Geo. M. Whitaker, travelling expenses, postage, express, telegrams, etc.,	652 07
Printing and supplies,	106 41
	<hr/>
	\$7,000 00

GEORGE M. WHITAKER,

General Agent.

Accepted and adopted as the report of the Dairy Bureau.

J. LEWIS ELLSWORTH.

CARLTON D. RICHARDSON.

FRED. W. SARGENT.

1137
1902

PUBLIC DOCUMENT

. No. 60.

TWELFTH ANNUAL REPORT

OF THE

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 15, 1903.



BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
18 POST OFFICE SQUARE.

1903.

TWELFTH ANNUAL REPORT

OF THE

Mass:

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 15, 1903.



BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,

18 POST OFFICE SQUARE.

1903.

APPROVED BY
THE STATE BOARD OF PUBLICATION.

614.32M3
D13n
1902
B

DAIRY BUREAU—1902.

J. L. ELLSWORTH, WORCESTER, *Chairman.*

C. D. RICHARDSON, WEST BROOKFIELD.

F. W. SARGENT, AMESBURY.

Secretary.

J. W. STOCKWELL, *Executive Officer and Secretary of the State
Board of Agriculture.*

General Agent.

GEO. M. WHITAKER, BOSTON.

REPORT.

The past year has been the most notable in the history of the Bureau, for two reasons. In the first place, there has been a record-breaking amount of work done. In no previous year in the history of the Bureau have there been so many business places visited, so many prosecutions or so many convictions. In the next place, there have been several important changes in State and national laws, some of which have had a material influence on the nature of our work. Congress has placed the Massachusetts anti-color oleomargarine law on a surer footing. When the national government was organized, the States gave up to the central authority the right to regulate interstate traffic; and therefore the constitutionality of the Massachusetts anti-color law was attacked on the ground that this State had encroached upon the prerogatives of the national government by interfering with interstate commerce. The supreme court did not uphold this view of the case, but maintained that Massachusetts, in regulating the sale of an imitation product, had acted within the scope of the police powers retained by the States at the organizing of the government. This opinion, however, was not unanimous, it being the view of a majority of the judges, a strong minority dissenting. A change of two judges, by death or resignation, might have resulted in a reversal of the decision. But now Congress has given back to the States the right to legislate as to oleomargarine, and the principle of the Massachusetts law is doubly clinched. In the same act Congress increased the internal revenue tax on colored oleomargarine to 10 cents per pound, and reduced the tax on the uncolored to $\frac{1}{4}$ cent. This makes imitation butter cost 8 cents more

than formerly, and $9\frac{3}{4}$ cents more than oleomargarine which has no artificial coloration. The result of this law, which went into effect July 1, has been to diminish the effort to violate the State law by pushing the sales of imitation butter, while uncolored oleomargarine has come upon the market in large amounts. Another thing which did much to increase and broaden our work was the giving us a larger appropriation with which to enforce the "renovated butter" law.

The membership of the Bureau has not been changed during the past year, the retiring member, Mr. C. D. Richardson, having been reappointed. P. M. Harwood has continued in service as an inspector, and R. M. Horton has been succeeded by A. W. Lombard. H. M. Merriam, (Mrs.) A. A. Bangs, and (Mrs.) Eva Myrick have been employed portions of the time. Others have worked for a few days occasionally, when special service was needed. The chemical work has been done, as in previous years, by Dr. B. F. Davenport of Boston and Edward B. Holland of the Hatch Experiment Station. The administrative work has continued in the same hands as heretofore.

STATISTICALLY.

Statistically, the work of the year has been as follows:—

Number of inspections,	3,895
Number of samples of butter or oleomargarine,	846
Number of samples of milk,	232
Cases in court,	285
Meetings addressed,	21

Adding the number of inspections where no samples were taken and those where the inspector took specimens, we have a total of 4,973 places visited by our inspectors during the year. The number last year was 2,668, and in 1900 2,438.

We have during the year collected evidence and presented to different courts 300 cases of violation of law. In most courts the business of receiving complaints and issuing warrants or summonses is done by the clerk, under provision of law. In Cambridge, however, the judge hears all the

evidence in advance of his trial of the cases, and authorizes the institution of proceedings only when there seems to him probable guilt. This year the judge has refused to take the word of the State officer representing this department of the Commonwealth's service as to whom the witnesses in the several cases would be, and what the evidence of each one would be, demanding the personal appearance of each witness for a preliminary investigation. This not having been arranged as yet, and the cases in two other courts having been continued beyond the 1st of January, the total number of cases prosecuted to completion has been 285; but, with this reduction, we have a record of 33 cases more than last year, which at that time we felt was a phenomenal record breaker; 107 cases more than in 1900, which broke the record up to that time; and 198 cases more than in 1899. All this work means just so much service to the consuming public of the State in the interest of pure and honest dairy foods, which otherwise would not have been performed.

The charges in the several cases were as follows:—

Oleomargarine, in imitation of butter,	53
Sold as butter,	12
Wagon unmarked,	2
Wrapping paper unmarked,	10
In restaurants,	13
	<hr/>
	90
Preservative in butter,	13
Preservative in oleomargarine,	2
Renovated butter,	120
Milk, not of standard quality,	48
Milk, adulterated,	5
Obstructing an officer,	7
	<hr/>
Total,	285

The comparison of the court cases for 1902 and some previous years may be of interest:—

1902,	285	1898,	60
1901,	252	1897,	27
1900,	178	1896,	79
1899,	87	1895,	82

The result of these cases was as follows :—

Discharged,	10
Defaulted,	3
Nol pros,	34
Conviction after trial, pleas of guilty or of <i>nolo contendere</i> ,	238
Total,	<hr/> 285

Several appealed cases have been pushed to a successful termination in the superior courts in various counties; and the supreme court appeal, reported at length last year, resulted in a decision in our favor, the defendant's exceptions being overruled.

OLEOMARGARINE.

The disparity of $9\frac{3}{4}$ cents per pound in the case of colored oleomargarine and white oleomargarine has driven much of the former imitation butter out of the market, and led the manufacturers to make a determined effort to get the uncolored article before the consuming public. This has done much to modify the nature of our work, and the results. We have been unable to relax our vigilance as regards oleomargarine colored in imitation of yellow butter. Although less of it has been sold in the State than heretofore, we have been obliged to keep a constant watch for it, as in many cases it has been in evidence; and we have had in court this year, as will be seen by the above table, 53 cases, as against 88 last year, 145 the year previous, 47 in 1899 and 13 in 1898. On the very last day of the year, December 31, our inspectors found two dealers handling the imitation article in cities in different parts of the State. The uncolored oleomargarine has also increased our work, for all of the laws heretofore existing relative to stamps, brands, signs, etc., apply to all kinds of oleomargarine, regardless of color. Hence we were obliged to inspect the dealers handling oleomargarine without artificial color, to see if the laws were complied with. The result has been that, instead of bringing cases under only two different laws, as was the case for the three previous years, in 1902 we made complaints for violation of five laws. Sometimes

we have found the white oleomargarine sold as butter, though in most of these the offenders were small dealers, some of them not familiar with our language and laws. In such instances we believed there was no intention of violating the law; but in one case a peddler, who was asked by an inquisitive customer why the butter was so white, replied that "Vermont had just passed a law against coloring butter."

The fluctuation of the oleomargarine business in Massachusetts, as indicated by the number of people paying the United States tax, is very significant. When the anti-color law was passed, in 1891, 485 people were paying a tax to sell imitation butter in this Commonwealth, — 34 at wholesale, 451 at retail. The number was gradually reduced under the operation of the law, until in the years ending June 30, 1897 and 1898, there were only 29 of these tax payers, one to do a wholesale business and 28 a retail business; and in 1898 the number of cases we had in court for violating the anti-color law was as low as 13. But with the national fiscal year ending June 30, 1899, there became evident a strenuous attempt on the part of the oleomargarine people to push more sharply than ever, and more openly and wilfully to violate the State law. The number of persons paying this tax for that year increased to 88, and for the year ending June 30, 1901, to 109; while the number of our court cases increased in the year 1900 to 178, 145 of these being for a violation of the anti-color law. This sharp fight put up against the law breakers had the effect to curtail the business, and the number of taxes fell off more than one-half the next year; but with the advent of the uncolored oleomargarine the number has increased to 346.

So far the consuming public has not taken hold of the uncolored oleomargarine very readily, preferring the color of butter. Should success attend the efforts to educate consumers to prefer a lighter-colored butter and to use uncolored oleomargarine in any considerable quantities, the latter would become an important factor to be considered commercially. But the moral question would be eliminated, for the light-colored oleomargarine would not be a fraud, and would

be sold honestly. Some manufacturers are straining hard to inch up in the matter of color, and some brands are now on the market which, in our opinion, are very close to “imitations of yellow butter.”

The number of persons who paid a United States tax the past seven years is shown by the following table:—

YEARS ENDING JUNE 30 —	Wholesale.	Retail.
1897,	1	28
1898,	1	28
1899,	12	76
1900,	3	59
1901,	6	103
1902,	3	48
Current year, — colored,	1	24
Current year, — uncolored,	7	314

RENOVATED BUTTER.

Last year's Legislature gave us an increased appropriation, so that we could enforce the “renovated butter” law. This is a law which requires identifying marks on tubs and boxes when it is in bulk, and on the wrapping paper in case of small sales. By reason of delays, the legislation was not perfected until half of the year had passed; we have in the remaining half of the time expended about one-half of the appropriation.

At first we took pains to give dealers information as to the law; many copies of it were printed and circulated among the trade. In spite of this, when we began taking samples and making purchases, we found many violations of the law. In most instances, at first, the dealers thus caught were persons of honest instincts, who intended to comply with the laws of the Commonwealth, but who had not become familiar with this particular statute, in spite of our efforts to disseminate information concerning it. These

dealers were an entirely different class of people from those who had been violating the oleomargarine (imitation butter) law, and therefore the former had a much better standing in court. This phase of the case gave rise to considerable perplexity, as we felt it necessary to proceed with great care and discretion, in order to do our duty faithfully and have the objects of the law secured, with a minimum of hardship and seeming oppression.

In most cases hitherto where the charge had been a violation of the "imitation butter" law there had been an evident intent or a studied purpose to evade the law. That was different in these violations of the "renovated butter" law, and hence we have had an unusual number of appeals for recommending leniency to the courts.

Another cause of some embarrassment has been the large penalty attached to the law, — a minimum of one hundred dollars, with no latitude to the courts for mitigating circumstances except placing the case on file. Nevertheless, we believe the statute is very useful, both for consumers and producers. Previously renovated butter was sold deceptively in nearly every instance. When put up in prints, it was labelled in a way particularly calculated to deceive the ordinary consumer. We have found it with such labels about each individual print as "Franklin County Creamery," "Sweet Clover Creamery," "Fancy Creamery-Iowa Brand-Pure Butter," with nothing to show the real character of the article. Even after there began to be an enforcement of the law, the spirit of deception was not summarily exorcised, but in most cases it was attributable to the manufacturers rather than to the retailers in whose hands we found the goods.

In Worcester over a dozen samples were taken where the words "renovated butter" on the wrapper were printed so dimly as to be almost imperceptible. Another batch of samples was labelled "Litchfield County Print Butter, put up expressly for family use, every package guaranteed," while the words "renovated butter" were in small, skeleton letters, smaller than the law required. Another wrapper bore the mark "Meadow Brook-Pure Butter-Creamery," with the words "renovated butter" in skeleton type, which

would hardly be recognized by the average purchaser. As the work of enforcing the law has progressed, these deceptive wrappers have to a very large extent disappeared, and more honest ones have taken their place. In this connection great assistance has been rendered by the United States law, which was added as a sort of rider to the Grout oleomargarine bill. Under this United States law a revenue tax of one-quarter cent a pound is imposed upon renovated butter, and there are a number of useful requirements as to brands, marks and stamps.

In case of marks on the outside wrapper, when two or more purchases are made and all packages are placed in an outside wrapper for the convenience of the customer in diminishing the number of parcels, the Attorney-General gives us the opinion that "the outside of the parcel containing the several parcels of merchandise, within the law, does not require the specific label if such be upon each of the parcels originally made up and delivered to the purchaser. Such delivery is, in my opinion, the delivery contemplated by the statute; and if, after such delivery, the customer requests, and in compliance with such request, expressed or implied, the seller, as agent for the purchaser, makes up the larger bundle, such transaction is no part of the original delivery; and, the law having been complied with as to each of the original packages, no further labels need be affixed by the seller."

In connection with the new national law, considerable was said in newspapers and elsewhere about the use of various preservatives in renovated butter; and, with a view of studying the way the business was transacted in Massachusetts, we caused a number of samples to be analyzed. Boracic acid was found in about one-third of them, and thirteen cases were entered in court under the general food law, which declares a substance adulterated if any antiseptic or preservative is used except common salt, saltpetre, spices, alcohol and sugar. The manufacturers defended the cases, but became satisfied that the Massachusetts law was valid and was to be enforced. They have therefore agreed to use no more boracic acid in the butter which is put upon the Massachusetts market.

BUTTER.

The market has been in a healthy condition through the year, with prices very high, averaging much more than any records which we have kept during the past seven years. During that time anything in excess of 29 cents has been reported but once; in January, 1900, 29½ cents was reached. During the past year in April the price went as high as 32 cents. Another peculiarity of the year 1902 was the fact that August averaged the lowest month, whereas May and June are ordinarily the low months of the year. The lowest quotation for any one week was the first week in September. The somewhat phenomenal advance in March and April let out the holders of storage butter at a good margin. For almost every month the price has been higher than for the average of the corresponding months of previous years.

The following table shows the extreme quotation for the best fresh creamery butter in a strictly wholesale way in the Boston market for the last seven years:—

	1902.	1901.	1900.	1899.	1898.	1897.	1896.
	Cents.	Cents.	Cents	Cents.	Cents.	Cents.	Cents.
January,	25.0	25.0	29.5	21.0	22.5	22.0	26.0
February,	28.5	25.0	26.0	24.0	21.5	22.0	24.0
March,	29.0	23.0	27.0	22.5	22.0	23.0	24.0
April,	32.0	22.0	21.0	21.0	22.5	22.0	22.0
May,	25.0	19.5	20.5	19.0	18.0	18.0	17.0
June,	23.5	20.0	20.5	19.0	17.5	16.0	16.5
July,	22.5	20.0	20.5	19.0	18.5	16.5	16.5
August,	21.5	21.0	22.5	21.5	19.5	19.0	17.5
September,	23.5	22.0	22.5	23.5	21.0	22.0	17.5
October,	24.5	21.5	22.0	24.0	21.5	22.5	20.0
November,	27.0	24.0	25.0	26.5	21.0	22.0	21.0
December,	28.5	24.5	25.5	28.0	21.0	23.0	23.0
Averages,	25.0	22.3	23.5	22.4	20.5	20.6	20.4

The Chamber of Commerce figures regarding the butter business in Boston for 1902 and the immediately preceding years are as follows:—

	1902. Pounds.	1901. Pounds.	1900. Pounds.	1899. Pounds.	1898. Pounds.	1897. Pounds.
On hand January 1,	4,512,000	3,285,960	2,073,800	2,829,160	2,473,600	2,898,000
Receipts for the year,	54,574,429	57,499,836	51,502,840	49,757,606	50,609,552	51,107,033
Total supply,	59,086,429	60,785,796	53,576,640	52,586,766	53,083,152	54,005,033
Exports, deduct,	940,031	5,708,603	1,002,374	3,051,710	1,574,682	3,286,333
Net supply,	58,146,398	55,077,193	52,574,266	49,535,056	51,508,470	50,718,700
Stock on hand December 31, deduct,	6,248,920	4,512,000	3,285,960	2,073,800	2,829,160	2,620,680
Consumption,	51,897,478	50,565,193	49,288,306	47,461,256	48,679,310	48,098,020

This shows an increased consumption, one million and a third pounds more than for the year 1901, and an average weekly consumption of about one million pounds. The table shows a steady increase in the consumption of butter from year to year, and the actual increase is much more than the figures show, because Boston is supplying a more and more restricted territory. Worcester, New Bedford, Lawrence and other cities are steadily becoming greater distributing centers, and are therefore supplying consumers who formerly received their product from the Boston market.

Creameries in Massachusetts.

LOCATION.	Name.	Co-operative or Proprietary.	Superintendent or Manager.
Amherst,	-	Co-operative,	F. J. Humphrey, agent.
Ashfield,	-	Co-operative,	Sanford Boyce, president.
Belchertown,	-	Co-operative,	M. G. Ward, president.
Bridgewater,	Plymouth County,	Co-operative,	P. O. Clark.
Charlemont,	-	Proprietary,	T. M. Totman.
Cheshire (P. O., Adams),	Greylock,	Co-operative,	C. J. Fales.
	Highland,	Proprietary,	Clayton W. Prince.
	West Shore,	Proprietary,	Seth W. Curtiss.
Chester,	-	Co-operative,	J. H. Keefe, treasurer.
Conway,	-	Co-operative,	J. B. Packard, president.
Cummington,	-	Co-operative,	S. W. Clark, president.
Easthampton,	Hampton,	Co-operative,	W. H. Wright, treasurer.
Egremont (P. O., North Egremont),	-	Co-operative,	H. O. Harrington.
Framingham,	-	-	-
Heath,	-	Proprietary,	D. B. Dunham.
Hinsdale,	-	Co-operative,	B. C. Bliss.
Lee,	-	Proprietary,	Jas. Lee.
Monson,	-	Proprietary,	W. C. Moulton.

Montague, .	.	.	.	.	.	—	Co-operative,	A. M. Lyman, president.
Monterey, .	.	.	.	.	.	Berkshire Hills, .	Co-operative,	Arthur Miner.
New Boston, .	.	.	.	.	.	Berkshire, .	Co-operative,	C. D. Sisson, Sandisfield.
New Salem, .	.	.	.	.	.	—	Co-operative,	W. A. Moore.
North Brookfield, .	.	.	.	.	.	—	Co-operative,	Richardson & Granger.
Northfield, .	.	.	.	.	.	—	Co-operative,	L. R. Smith.
Orange (P. O., North Orange), .	.	.	.	.	.	—	Co-operative,	Jonathan Holt.
Oxford (P. O., North Oxford), .	.	.	.	.	.	Cold Spring, .	Co-operative,	C. H. Wellington.
Shelburne Falls, .	.	.	.	.	.	—	Proprietary,	Rufus Covell.
Southborough, .	.	.	.	.	.	Deerfoot Farm, .	Proprietary,	R. M. Burnett.
Southfield, .	.	.	.	.	.	Maple Lawn, .	Co-operative,	A. C. Lockwood.
Uxbridge, .	.	.	.	.	.	Blackstone Valley, .	Co-operative,	E. H. Farnum.
Warren, .	.	.	.	.	.	Farnum, .	Proprietary,	Geo. A. Farnum.
Wellesley, .	.	.	.	.	.	Worcester County, .	Co-operative,	Calvin Bliss.
Westfield (P. O., Wyben), .	.	.	.	.	.	Wyben Spring, .	Co-operative,	C. H. Wolcott.
West Newbury, .	.	.	.	.	.	—	Co-operative,	S. O. Ordway.
Williamsburg, .	.	.	.	.	.	—	Co-operative,	E. T. Barrus, president.
Worthington, .	.	.	.	.	.	—	Co-operative,	J. B. Pease.
Boston, .	.	.	.	.	.	388 Rutherford Avenue, .	Proprietary,	Boston Dairy Company.
						38 Huntington Avenue, Hobart Farm Creamery, .	Proprietary,	J. W. Hobart.

Creameries in Massachusetts — Concluded.

LOCATION.	Name.	Co-operative or Proprietary.	Superintendent or Manager.
Boston,	172 Washington Street,	Proprietary,	Henderson Dairy Company.
	394 Rutherford Avenue,	Proprietary,	H. P. Hood & Sons.
	203 Clarendon Street, Walker-Gordon Laboratory,	-	-
	472 Rutherford Avenue,	-	D. Whiting & Son.
Boylston,	Adelphia,	Proprietary,	E. M. Laws.
Brockton,	-	-	Brockton Dairy Company.
Cambridge,	158 Massachusetts Avenue,	-	C. Brigham Company.
Everett,	-	-	New England Creamery Company.
Fitchburg,	-	Proprietary,	C. S. Learned.
Haverhill,	-	-	C. H. McCormick.
Hingham,	Hingham Dairy Association,	-	-
Leominster,	-	-	G. S. Wass.
Marlborough,	-	Proprietary,	F. F. Este.
North Adams,	North Adams Milk Association,	Proprietary,	C. M. Bull.
Springfield,	Springfield Milk Association,	Co-operative,	F. B. Allen.
Worcester,	Wachusett,	Proprietary,	-

When the creamery movement started in Massachusetts nearly all of the creameries were co-operative, and statistics connected with them were regarded as of a great deal of value, because every farmer and milk producer had an interest in the outcome of the operations of the creameries. The competition with the sale milk business in Boston, and other reasons, have made considerable of a change in this respect, and, as will be noticed by the above list, many of the creameries are now proprietary. Some of the co-operative creameries have continued, and we compile the following from their latest reports, showing something of their general methods: —

BELCHERTOWN. — Amount of cream collected, 906,356 pounds. From this was made 201,352 pounds of butter after selling cream to the value of \$485. The total receipts for the year were \$55,131. The amounts paid were as follows: —

Gathering cream,	\$3,076 00
Making butter,	1,040 00
Selling and delivering,	919 00
Freight and express,	401 00
Patrons for cream,	42,526 00
Officers,	637 00
Testing cream,	48 00
Discounts,	299 00
Other expenses,	1,431 00

MONTAGUE. — This creamery received 287,467 pounds of cream, and made 68,084 pounds of butter. The average price of the butter was 25.24 cents per pound, and the average paid for butter fat was $24\frac{1}{2}$ cents.

HAMPTON. — Received 890,823 pounds cream, producing 161,159 pounds butter. The receipts of the year were \$50,649.85. Payments were as follows: —

Paid patrons,	\$41,389 67
Ordinary expenses,	6,628 57
Dividends, 6 per cent,	150 00
Balance to new account,	2,481 61
	<hr/>
	\$50,649 85

HINSDALE CREAMERY. — Made 103,701 pounds butter. Its total receipts were \$25,529.55. The payments were as follows: —

Patrons for cream,	\$19,503 43
Expenses,	4,428 77
Dividend on capital stock, 1900, 5 per cent,	171 25
One half cent reserve,	523 30
Supplies sold patrons,	15 08
Error,	54
Cash on hand,	887 18
	<hr/>
	\$25,529 55

CONWAY CREAMERY. — Made about 420,000 pounds butter, and sold about 28,600 pounds which it had to purchase from other sources. Its sales of cream and butter amounted to about \$125,000, and disbursements to patrons for cream \$100,575.

EGREMONT CREAMERY. — Received 735,751 pounds cream, and made 157,045 pounds butter. The total receipts were \$36,453.61, expenses were \$5,853.55, the balance going to the farmers who produced the cream.

MILK.

During the year the milk market has been in the main firm in price, with a fair demand and no great amount of surplus. The cold summer caused a mark falling off in the amounts of milk and cream used at summer resorts, and producers dependent upon that kind of a market did not do as good a business as some years. Later in the year the colder weather, coupled with the outbreak of the foot and mouth disease, caused a material shortening of the supply. The retail price of milk in the various towns and cities of the State varies somewhat, according to local competition, but is within the limits of 6 and 8 cents for ordinary milk. Fancy certified milk, of extra quality, sells at a higher price.

Some things have come to our knowledge during the year which convince us that a certain class of city peddlers do quite a business in what may be called blended milk. They prepare an article which is uniform in composition, and substantially up to the standard. During the 12 per cent months they sell milk of about 11.8 per cent solids, and when the standard advances to 13 per cent, by some form of lacteal necromancy their product easily follows the standard. We believe they would have no trouble in furnishing a milk of a greater per cent of solids, should the law require it. As reported in another place, we took 232 samples of milk during the year, and had 53 cases in court.

The amount of total solids in the milk, where the charge was milk below the standard, was as follows : —

10.20	11.92	11.12	10.84
11.78	12.32	11.76	9.92
11.26	12.52	11.02	11.22
11.90	12.50	11.72	11.76
12.22	12.52	11.22	11.76
11.36	12.42	11.36	11.14
11.76	11.44	11.86	11.32
11.60	11.70	11.62	10.26
11.10	10.40	11.62	9.56
11.56	11.76	11.74	10.38
11.80	10.50	11.54	10.76
12.38	11.44	11.30	10.80

The price of Boston milk has been higher than for many years. At the meeting in the spring, to fix prices, the directors of the milk producers union asked for 36 cents as a Boston price, less an agreed “surplus discount” of 2 cents, making a “straight price” of 34 cents. The contractors offered 1 cent less, with provisions tending to promote a more even production. The matter was finally adjusted by a compromise, by which 36 cents was made the price for April, July, August and September, and 35 cents for May and June. At the time of making the price for October there were a number of protracted conferences, which resulted finally in a trade for 39½ cents as the Boston price, and 37½ cents as the net price. In addition to this, the contractors agreed that the word “surplus” was not to appear in negotiations with producers, and that no alternative propositions were to be made. The surplus provisions having disappeared from the contracts, the contractors felt under no obligations to continue giving the figures of receipts and sales, and consequently we are unable to get that statistical information for this report, much to our regret. In other lines of business, full statistics are regarded as essential to intelligent action.

The following table shows the price of Boston milk for the past ten years, the report for last year giving the figures for eleven years previous to that. It should be understood, by way of explanation, that previous to 1900 farmers received a specified long price for what milk could

be sold as sale milk, and butter value for the surplus. Under this trade they received two prices for milk, the average price being a little less than the long price for sale milk; the amount of discount depended on the amount of surplus and on the price of butter. The contractors, for convenience in bookkeeping, figured all of the milk at the long price, and then applied to the result a discount which would give, as the balance, the proper amount to be paid to the farmers. In this way the expression "surplus discount" or "discount on account of surplus" came into existence. That way of doing business, in its practical operation, having many evils and having become unpopular, the old-time method of getting at the net average price has been abolished, and the long price has been arbitrarily reduced $1\frac{1}{2}$ and 2 cents, in lieu of a surplus discount, figured on the actual conditions as to amount of surplus and value of butter.

The price that the farmer received has been a fixed discount from this, varying according to the distance from Boston. We have included in the table the price which the producer in the middle belt has received during this time, the price being what he has received for all milk consumed as such in Boston, and not the average income of his dairy when both sale milk and butter value of surplus are considered and averaged. The figures are for $8\frac{1}{2}$ quart cans.

Summer Price.

	Gross Boston Price. Cents.	"Straight Price," Boston. Cents.	Gross to Pro- ducer, Fifth Zone. Cents.	Straight Price to Producer, Fifth Zone. Cents.
1893, April to October, . .	33	-	22	-
1894, " " . .	33	-	22	-
1895, " " . .	33	-	22	-
1896, " " . .	33	-	22	-
1897, " " . .	31*	-	22	-
1898, " " . .	31	-	22	-
1899, " " . .	31	-	22	-
1900, " " . .	33	-	24	-
1901, " " . .	33	31	24	22
1902, " " . .	<div> <div>36 in April, July, August, September.</div> <div>34 in April, July, August, September.</div> </div>		<div> <div>27</div> <div>26</div> </div>	
	35 in May, June.		33 in May, June.	

* This is a nominal rather than an actual change. With the dropping of the Boston price 2 cents the distance discount-schedule was also lowered 2 cents, so that producers received the same price.

Winter Price.

	Gross Boston Price. Cents.	"Straight Price," Boston. Cents.	Gross to Pro- ducer, Fifth Zone. Cents.	Straight Price to Producer, Fifth Zone. Cents.
1893-4, October to April,	37	-	26	-
1894-5, " "	37	-	26	-
1895-6, " "	37	-	26	-
1896-7, " "	35	-	24	-
1897-8, " "	33*	-	24	-
1898-9, " "	33	-	24	-
1899-0, " "	33	-	24	-
1900-1, " "	{ 37 to January. 35 to April. }	{ - }	{ 28 to January. 26 to April. }	{ - }
1901-2, " "	{ 36 40 in December. }	{ 34½ 38½ in December. }	{ 27 31 }	{ 25.5 29.5 }
1902-3, " "	39½	37½	30½	29

* This is a nominal rather than an actual change. With the dropping of the Boston price 2 cents the distance discount-schedule was also lowered 2 cents, so that producers received the same price.

EDUCATIONALLY.

The work of the Bureau is unique and different from that of any other department of the State government, because, under the statute, there is broad educational work as well as police duties. No other State department having police duties is required to do similar work along the line of collecting and disseminating information. During the last year the amount of educational work done has been less than usual, though the general agent has responded to about the average number of calls for addresses. In the discharge of this part of his work, he has spoken to 20 different gatherings. Last year the number was 14, and the year before it was 19. At a number of these meetings object lesson demonstrations of the Babcock test have been given, nearly 150 samples of milk having been tested in that manner. The general agent has again been called upon to award the sweepstakes dairy prize for the Worcester South Agricultural Society, based on the amount of butter fat produced on the grounds of the society by individual cows in twenty-four hours. The following table gives the results of the test for the past year:—

OWNER.	Breed.	Pounds Milk.	Per Cent Fat.	Pounds Fat.
J. E. Kimball, Oxford, . . .	Jersey, "Rosa," . . .	12.87	5.8	.75
		10.00	4.8	.48
		22.87		1.23
A. L. Woodis, North Brookfield, . . .	Ayrshire,	17.25	3.4	.586
		14.87	4.0	.595
		32.12		1.181
J. E. Kimball, Oxford, . . .	Jersey, "Daisy," . . .	12.00	5.0	.60
		11.94	4.6	.55
		23.94		1.15
J. E. Kimball, Oxford, . . .	Jersey, "Princess," . . .	11.87	5.2	.617
		10.75	4.8	.516
		22.62		1.133
C. L. Underwood,	Guernsey, "Daisy," . . .	16.75	3.4	.57
		17.62	3.2	.56
		33.37		1.13
G. H. Bowker,	Ayrshire,	17.00	3.2	.54
		14.50	4.0	.58
		31.50		1.12
A. L. Woodis,	Ayrshire,	13.87	3.4	.47
		14.87	3.8	.56
		28.74		1.03
J. E. Kimball,	Jersey, "Beauty," . . .	12.75	4.4	.56
		11.75	4.0	.47
		24.50		1.03
E. D. Cole, Barre Plains, . . .	Reg. Holstein,	17.37	3.0	.52
		17.12	3.0	.51
		34.49		1.03
C. L. Underwood,	Guernsey, "Gypsy," . . .	11.25	4.8	.54
		11.50	4.2	.48
		22.75		1.02
C. L. Underwood,	Guernsey, "Belle," . . .	14.00	3.2	.45
		13.75	3.2	.44
		27.75		.89

In addition, there has been published a compilation of the Revised Laws relating to dairy matters and the decisions of the supreme court on the same, edited to conform to the new numbering of the Revised Laws.

EXPENSES.

The following is a classified statement of the expenses of the year :—

Agents' salaries,	. . . . .	\$1,914 05
Agents' expenses,	. . . . .	2,581 68
G. M. Whitaker, general agent, for travelling expenses, post- age, mileage, etc.,	. . . . .	821 03
Chemists,	. . . . .	2,790 75
Bureau,	. . . . .	346 20
Supplies and printing,	. . . . .	152 11
Educational,	. . . . .	12 33
		<hr/>
Total,	. . . . .	\$8,618 21

GEORGE M. WHITAKER,
General Agent.

Accepted and adopted as the report of the Dairy Bureau.

J. LEWIS ELLSWORTH.
CARLTON D. RICHARDSON.
FRED. W. SARGENT.

THIRTEENTH ANNUAL REPORT

OF THE

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 15, 1904.



BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,

18 POST OFFICE SQUARE.

1904.

THIRTEENTH ANNUAL REPORT

OF THE

Mass:

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 15, 1904.



BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,

18 POST OFFICE SQUARE.

1904.

APPROVED BY
THE STATE BOARD OF PUBLICATION.

614.32M3
II 13n
1903
B

DAIRY BUREAU — 1903.

C. D. RICHARDSON, WEST BROOKFIELD, *Chairman.*

JOHN M. DANFORTH, LYNNFIELD CENTRE.

A. M. LYMAN, MONTAGUE.

Secretary.

J. LEWIS ELLSWORTH, *Executive Officer and Secretary of the State
Board of Agriculture.*

General Agent.

P. M. HARWOOD.

ADDRESS, ROOM 136, STATE HOUSE, BOSTON.

Commonwealth of Massachusetts.

REPORT.

The character of the work of the Bureau has been more or less affected by recent national laws and the rulings of our superior court judges; more care and expense in securing evidence are now necessary; prima facie evidence is no longer as useful as formerly, and technical cases have disappeared almost altogether, actual fraud now usually appearing in the evidence, if not always in the complaint. Whatever has been necessary in the way of expense in obtaining evidence has not been spared, and it has served the purpose of indicating whether the sale was a practice or an accident, also of helping materially in securing conviction in the courts. The result has been most satisfactory, there having been but one violation of law prosecuted during the year which ultimately failed, and that simply because the party could not afterwards be found; the total convictions for the year being 34 more than in any previous year, and 72 more than the average for the three preceding years. About the usual amount of educational work has been done. The office of the general agent has been removed to the State House, and his entire time is given to the work.

The membership of the Bureau has been materially changed. The chairman, J. Lewis Ellsworth, retired July 1, to become secretary of the State Board of Agriculture, and executive officer of the Dairy Bureau. C. D. Richardson was elected chairman. F. W. Sargent was succeeded by John M. Danforth, and A. M. Lyman was appointed to fill the vacancy caused by the retirement of Mr. Ellsworth. At the annual meeting of the State Board of Agriculture, Jan. 14, 1903, P. M. Harwood was elected general agent. A. W. Lombard has been employed regularly as agent, and four others have been employed as occasion required. The

chemical work has been done by Dr. B. F. Davenport of Boston and E. B. Holland of the Hatch Experiment Station, Amherst.

The work of the year has been as follows : —

Total number of inspections,	5,524*
Number of inspections where no samples were taken, . . .	4,135
Number of samples of butter and oleomargarine, nearly all purchased,	1,379
Number of samples of milk and cream,	16
Cases in court,	289
Meetings addressed by the general agent,	20
Meetings addressed by the chairman of the Bureau, . . .	7

Cases prosecuted † during the year, by months and courts, with law violated, and results, are as follows : —

COURT.	Month.	Num-ber.	Law violated.	Con-victed.	Dis-charged.
West Newton, .	January, .	5	Milk,	5	—
Chicopee, . .	January, .	2	Milk,	2	—
Worcester, . .	February, .	2	Oleomargarine, .	2	—
Lynn,	February, .	6	Renovated butter, .	6	—
Salem,	February, .	1	Renovated butter, .	1	—
Waltham, . . .	February, .	2	Renovated butter, .	2	—
Cambridge, . .	March, . . .	5	Renovated butter, .	5	—
Newburyport, .	March, . . .	2	Renovated butter, .	2	—
Newburyport, .	March, . . .	6	Oleomargarine, .	6	—
Gloucester, . .	March, . . .	2	Renovated butter, .	2	—
Hudson,	March, . . .	1	Renovated butter, .	1	—
Marlborough, .	March, . . .	1	Renovated butter, .	1	—
Quincy,	April,	2	Oleomargarine, .	2	—
Quincy,	April,	3	Renovated butter, .	3	—

* Six extra samples were taken during inspections, therefore this total is 6 less than the sum of the next three items.

† As this is a table of prosecutions, and not of cases entered in court, all *not pros* cases — 10 in number — are eliminated.

COURT.	Month.	Num-ber.	Law violated.	Con-victed.	Dis-charged.
Fitchburg, . .	April, . .	2	Renovated butter, .	2	-
Franklin, . .	April, . .	2	Renovated butter, .	2	-
Athol, . .	April, . .	2	Oleomargarine, . .	2	-
Attleborough, .	April, . .	4	Renovated butter, .	4	-
Attleborough, .	April, . .	2	Oleomargarine, . .	2	-
Lynn, . .	May, . .	2	Renovated butter, .	2	-
Lynn, . .	May, . .	4	Oleomargarine, . .	3	1*
Taunton, . .	May, . .	4	Renovated butter, .	4	-
Amesbury, . .	May, . .	2	Oleomargarine, . .	2	-
Amesbury, . .	June, . .	1	Oleomargarine, . .	1	-
Amesbury, . .	June, . .	2	Renovated butter, .	2	-
New Bedford, .	June, . .	4	Renovated butter, .	4	-
New Bedford, .	June, . .	6	Oleomargarine, . .	6	-
Lowell, . .	July, . .	10	Oleomargarine, . .	10	-
Lowell, . .	July, . .	10	Renovated butter, .	10	-
Provincetown, .	July, . .	2	Renovated butter, .	2	-
Cottage City, .	August, .	2	Renovated butter, .	2	-
Malden, . .	August, .	2	Renovated butter, .	2	-
Chelsea, . .	September, .	4	Renovated butter, .	4	-
Plymouth, . .	September, .	2	Renovated butter, .	2	-
Dedham, . .	September, .	2	Renovated butter, .	2	-
Dedham, . .	October, .	2	Renovated butter, .	2	-
Worcester, . .	October, .	26	Renovated butter, .	26	-
Worcester, . .	October, .	10	Oleomargarine, . .	10	-
Somerville, . .	October, .	4	Renovated butter, .	4	-
Lawrence, . .	November, .	10	Renovated butter, .	10	-

* In this case, reported as discharged, a husband testified that his wife was the owner of the place. The wife was afterwards complained of for the same offence, and convicted.

COURT.	Month.	Num-ber.	Law violated.	Con- victed.	Dis- charged.
Fall River, .	November, .	56	Renovated butter, .	50	6*
Fall River, .	November, .	2	Oleomargarine, .	2	-
Dedham, . .	November, .	2	Renovated butter, .	2	-
Lynn, . . .	December, .	4	Renovated butter, .	4	-
Northampton, .	December, .	1	Renovated butter, .	1	-
Salem, . . .	December, .	5	Renovated butter, .	5	-
Salem, . . .	December, .	2	Oleomargarine, .	2	-
Holyoke, . .	December, .	12	Renovated butter, .	12	-
Pittsfield, . .	December, .	2	Renovated butter, .	2	-
North Adams, .	December, .	8	Renovated butter, .	8	-
Springfield, .	December, .	14	Renovated butter, .	14	-
Lowell, . . .	December, .	4	Renovated butter, .	4	-
Lowell, . . .	December, .	4	Oleomargarine, .	4	-
		279		272	7

The charges in the several cases in court for the year have been as follows :—

Selling renovated butter in unmarked packages,	226
Oleomargarine sold as and for butter,	23
Oleomargarine sold in unmarked packages,	14†
Oleomargarine sold from unmarked vehicle,	1
Oleomargarine sold in imitation of yellow butter,	3
Oleomargarine served in restaurants without notifying guests, .	15
Milk adulterated,	6
Milk below standard,	1

289

* In 5 of these 6 cases, reported as discharged, complaint was afterwards brought against the clerks who actually made the sales, and all were convicted. In the sixth case our agents were unable to afterwards find the seller; this case, therefore, is the only violation of law prosecuted during the year where conviction was not finally secured.

† In 12 of these cases oleomargarine was sold as and for butter, but the cases were entered as above, for convenience.

The following is a list of inspections without samples and the number of samples taken since the organization of the Bureau. In 1891 and 1892 none were reported.

YEAR.	Inspections without Samples.	Samples taken.
1893,*	382	113
1894,	716	388
1895,	1,901	474
1896,	1,949	495
1897,	1,986	212
1898,	1,351	1,140
1899,	1,935	1,459
1900,	1,612	826
1901,	1,757	911
1902,	3,895	1,078
1903,	4,135	1,395
Totals,	21,619	8,491

* Stores.

The following is a list of the number of cases entered in court and also the number of convictions secured each year since the organization of the Bureau: —

YEAR.	Total Cases.	Convictions.
1891,	—	—
1892,	—	—
1893,	48	30
1894,	104	71
1895,	82	42
1896,	76	51
1897,	26	24
1898,	60	59
1899,	87	70
1900,	178	144
1901,	252	218
1902,	285	238
1903,	289	272
Totals,	1,487	1,219

The following are averages of convictions since the establishment of the Bureau: —

First two years,	No convictions.
Average convictions per year for first seven years after prosecutions were begun,	50—
Average convictions per year for the next three years,	200
Convictions this year,	272
Average convictions per year since prosecutions were begun by Bureau,	111—

OLEOMARGARINE.

Prior to the passage of the national law which went into effect, July 1, 1902, and practically legislated oleomargarine containing foreign coloring matter out of our local markets, because of the tax of 10 cents per pound imposed, the profit of selling oleomargarine as and for butter was so great that violations of the Massachusetts anti-color law were frequent. The work of the agents of the Bureau in those days was very largely of a detective nature, months sometimes being consumed in working up cases against pedlers and others who were persisting in violating the law. Now all is changed. But few of the old stores, where the law was formerly violated, remain in the same hands, and a large number of the pedlers have gone out of business, rarely showing signs of prosperity as a result of money made from the illegitimate traffic. At the present time most of the goods are on sale by reputable grocers, are uncolored, and in the main, although by no means always, sold according to law; but the sales are light and the profits small. It seems to us that this reversal of oleomargarine interests has been brought about in no small degree by the oleomargarine men themselves. Oleomargarine may be clean and wholesome when properly made, and cheap; but the moment it is sold as and for butter it becomes a fraud, an imposition upon the public, and robs the butter maker of his legitimate market. Hence laws, State and national, have been enacted, until to-day oleomargarine seems to be forced back upon its own merits; and, unless the present laws are upset by supreme court decisions, it will have to remain there, winning whatever favor it can upon merit alone. This is as it should be. But it has not been brought about without a struggle.

Early in the year Judge Bishop of the superior court in

Boston made a ruling which was afterwards endorsed by Judge Stevens, and which practically nullifies the anti-color law except in cases where foreign coloration can be proved. Prior to July 1, 1902, most of the complaints for illegal sale of oleomargarine were brought under the anti-color law, and the complainant was rarely, if ever, called upon to prove foreign coloration in order to win his cases. This was so because all oleomargarine then made in imitation of yellow butter contained foreign coloring matter in forms easily detected, and therefore no oleomargarine manufacturer or dealer would or could successfully contest the point, and hence did not. But when the national law imposed a tax of 10 cents per pound on oleomargarine artificially colored in imitation of yellow butter, and allowed that not so colored to escape with a tax of $\frac{1}{4}$ of a cent per pound, the manufacturers tried their best to produce an imitation of yellow butter which would not be construed by the internal revenue officers to be "artificially colored." In the first place, an attempt is said to have been made to use a partially bleached cotton-seed oil; but this affected the flavor of the goods so unfavorably that it had to be given up. Then, it is claimed, a cotton-seed oil containing a small percentage of palm oil was used. This went along for some time, making a good imitation of light yellow butter, until a method was discovered by a government chemist whereby the palm oil could be detected, the revenue department ruling that palm oil was an artificial coloration. This ruling is what has finally placed the oleomargarine situation where it is. This last attempt to color their goods in imitation of yellow butter shows the animus of the manufacturers, and also how vitally they consider the point of color in the success of their business. A strenuous effort has been made by them to introduce oleomargarine to the general trade, and a large number of retail merchants have taken out licenses. This was auspicious for the makers and wholesalers, for they were thus able to trade with prosperous merchants and men of good financial standing. The result, however, was not all that had been expected. There seems to be a considerable prejudice yet in the public mind against oleomargarine.

Fifty-six cases for violation of oleomargarine laws have been entered in court during the year.

The number of persons who paid a United States tax the past four years is shown by the following table :—

YEARS ENDING JUNE 30.	Wholesale.	Retail.
1900,	3	59
1901,	6	103
1902,	3	48
1903 (colored),	1	24
1903 (uncolored),	7	314
Current year (colored),	—	17
Current year (uncolored),	9	326

Notwithstanding the fact that the number of oleomargarine licenses has greatly increased since the passage of the national law of 1902, the total output has fallen off from 25 to 50 per cent in different sections of the country.

RENOVATED BUTTER.

With the partial disappearance of artificially colored oleomargarine there has gradually come to the front violations of the “process” or “renovated” butter law. Never before in the history of the Bureau have there been so many noticeable violations. There have been 226 cases entered in the various courts during the year. The tendency on the part of some retailers to palm these goods off as creamery or dairy butter is remarkable. The color of the goods and the wholesale price make this easy, especially where the butter is cut from tubs or boxes. It is worthy of remark, however, that but two wholesalers, one in the central and the other in the western part of the State, have thus far been detected by the Bureau in violating this provision of law relating to the marking of packages. We are compelled to report that one of these, a very serious violation, has been

discovered this year. This is a case where all stamps, brands or marks which would indicate in any way that the contents of the tubs was renovated butter had apparently been removed, and the tubs were not stamped top, bottom and side, as our State law requires, and the goods were sold as "Hawkeye Creamery Butter." One retail dealer alone testified that he had sold several hundred tubs of this brand, under the impression that it was straight creamery butter; and we find indications that seven different stores were retailing this particular brand of goods. The wholesaler pleaded guilty, and was fined \$100, the limit for first offences, most of the retailers being fined \$25 each.

Preservatives have been conspicuously absent from the renovated butter sold in this State during the past year.

In prosecuting renovated butter cases the Bureau has adopted this year a somewhat different policy. No case has been entered in court except where a sufficient number of samples were previously purchased to indicate that the violation of the law was the habit of the dealer, and not an accident on either his part or that of his clerk. The result has been that all the violations of law entered in court since the adoption of this policy have finally been punished, with but the one exception elsewhere mentioned. As a rule, the proprietors or owners of stores are brought into court to answer these charges, whether the sales were made by them or their clerks, the Bureau believing this to be the correct policy.

There is one marked result in the prosecution of these renovated butter cases, in contrast with violations of the oleomargarine anti-color law, namely, that it is seldom that a man is found violating the law a second time after conviction.

The last Legislature changed the penalty for violation of the renovated butter law, making the fine \$25 to \$100 for the first offence, with heavier penalties for subsequent offences, the law going into effect June 20, 1903. Since that date but little difficulty has been experienced in securing the imposing and payment of fines. But two parties have appealed their cases during the year.

EDUCATIONAL WORK.

The field for labor along the line of educational work, a duty imposed by statute upon this Bureau, is no less broad and of no less importance than is the police side. A better dairy product, put up in a better manner and in better condition, handled with greater care, and finally fed more wisely, will add not only to the enjoyment but also to the health of the consuming public, and incidentally to the financial benefit of the producers. The *best* dairy product, whether milk, cream, butter or cheese, has no competitor, no imitator. Were there no butter that needs "renovating," there would be no "renovated" butter. Were it not that butter is often of an inferior quality, oleomargarine would find little place in the markets of the world, and the possibility of palming it off "as and for butter" would be practically removed. It is along these lines that the Dairy Bureau is interested in its educational duties, and is working so far as the limited funds at its disposal will allow.

The general agent has addressed twenty meetings during the year, and the chairman of the Bureau seven meetings. Several of the more important milk depots and creameries have been inspected by the Bureau, and it is with pleasure that we note the interest in all matters appertaining to the betterment of dairy products, and especially the improvement noticeable in the handling of milk for the Boston market. It is but a few years since when milk brought to Boston was not as well cared for as it might have been, either at the farm or in transit. To-day the milk contractors insist on sanitary conditions at the farm where the milk is produced, and year by year there is improvement. There is also improvement at the handling end, as any one can see by inspecting the various milk depots. There is, however, still room for greater improvement. It is a long road to perfection, and the doctrine of "clean milk" needs to be impressed upon all, until this most useful and nourishing food, in whatever form, reaches the consumer in its highest state of perfection.

BUTTER.

Notwithstanding the fact that the average wholesale price of butter for the entire year has been slightly higher than for the seven years next preceding, the summer price was abnormally low, and this low price extended well into the autumn. The copious rains and a consequent large amount of green food were apparently responsible for this. Massachusetts creameries have been obliged, however, to sell their butter at lower prices than formerly. Report comes from the west just at the close of the year that there is a shortage of butter production in some sections.

The following table shows the extreme quotation for the best fresh creamery butter in a strictly wholesale way in the Boston market for the last eight years : —

	1903. Cents.	1902. Cents.	1901. Cents.	1900. Cents.	1899. Cents.	1898. Cents.	1897. Cents.	1896. Cents.
January, .	28.0	25.0	25.0	29.5	21.0	22.5	22.0	26.0
February, .	27.0	28.5	25.0	26.0	24.0	21.5	22.0	24.0
March, . .	27.0	29.0	23.0	27.0	22.5	22.0	23.0	24.0
April, . .	27.5	32.0	22.0	21.0	21.0	22.5	22.0	22.0
May, . . .	22.5	25.0	19.5	20.5	19.0	18.0	18.0	17.0
June, . . .	22.75	23.5	20.0	20.5	19.0	17.5	16.0	16.5
July, . . .	20.5	22.5	20.0	20.5	19.0	18.5	16.5	16.5
August, . .	20.0	21.5	21.0	22.5	21.5	19.5	19.0	17.5
September, .	22.0	23.5	22.0	22.5	23.5	21.0	22.0	17.5
October, . .	22.5	24.5	21.5	22.0	24.0	21.5	22.5	20.0
November, .	23.5	27.0	24.0	25.0	26.5	21.0	22.0	21.0
December, .	24.5	28.5	24.5	25.5	28.0	21.0	23.0	23.0
Averages,	26.23	25.0	22.3	23.5	22.4	20.5	20.6	20.4

The Chamber of Commerce's figures regarding the butter business in Boston for 1903 and the immediately preceding years are as follows : —

	1903. Pounds.	1902. Pounds.	1901. Pounds.	1900. Pounds.	1899. Pounds.	1898. Pounds.	1897. Pounds.
On hand January 1,	6,248,920	4,512,000	3,285,960	2,073,800	2,829,160	2,473,600	2,898,000
Receipts for the year,	54,347,056	54,574,429	57,499,836	51,502,840	49,757,606	50,609,552	51,107,033
Total supply,	60,595,976	59,086,429	60,785,796	53,576,640	52,586,766	53,083,152	54,005,033
Exports, deduct,	842,692	940,031	5,708,603	1,002,374	3,051,710	1,574,682	3,286,333
Net supply,	59,753,284	58,146,398	55,077,193	52,574,266	49,535,056	51,508,470	50,718,700
Stock on hand December 31, deduct,	7,567,360	6,248,920	4,512,000	3,285,960	2,073,800	2,829,160	2,620,680
Consumption,	52,185,924	51,897,478	50,565,193	49,288,306	47,461,256	48,679,310	48,098,020

MILK.

The milk market has been good throughout the year. Prices have ruled higher than before for many years. It is claimed by the Milk Producers' Union that in the bringing about of the increased price over four years ago the equalization of production and the holding in check of extension of territory have been important factors. In attempting to fix the price of milk (as is done twice each year), great struggles have occurred between the milk producers and the milk contractors, but each time serious trouble has been avoided.

But few prosecutions for violation of the milk law have been made during the year, a less number of complaints than usual having come in. Sixteen samples have been taken, six cases prosecuted for adulteration and one for milk below standard. The adulterations were, in one case, water; in two, formaldehyde; and in three, boracic acid.

The usual tables, with the 1903 prices added, are here given:—

Summer Price.

	Gross Boston Price. Cents.	"Straight Price," Boston. Cents.	Gross to Pro- ducer, Fifth Zone. Cents.	Straight Price to Producer, Fifth Zone.* Cents.
1893, April to October, .	33	—	22	—
1894, " " .	33	—	22	—
1895, " " .	33	—	22	—
1896, " " .	33	—	22	—
1897, " " .	31†	—	22	—
1898, " " .	31	—	22	—
1899, " " .	31	—	22	—
1900, " " .	33	—	24	—
1901, " " .	33	31	24	22
1902, " " {	36 in April July, August, September.	34 in April, July, August, September.	} 27	25
	35 in May, June.	33 in May, June.		24
1903, " " .	37½	35½	28½	26½

* The price in the fifth zone, i.e., the middle territory, is approximately the average price which the producers receive for their milk.

† This is a nominal rather than an actual change. With the dropping of the Boston price 2 cents the distance discount-schedule was also lowered 2 cents, so that producers received the same price.

Winter Price.

	Gross Boston Price. Cents.	"Straight Price," Boston. Cents.	Gross to Pro- ducer, Fifth Zone. Cents.	Straight Price to Producer, Fifth Zone.* Cents.
1893-4, October to April, .	37	-	26	-
1894-5, " " .	37	-	26	-
1895-6, " " .	37	-	26	-
1896-7, " " .	35	-	24	-
1897-8, " " .	33†	-	24	-
1898-9, " " .	33	-	24	-
1899-0, " " .	33	-	24	-
1900-1, " " {	37 to January. 35 to April. }	- {	28 to January. 26 to April. }	- {
1901-2, " " {	36 40 in December. }	34½ 38½ in December. }	27 31	25.5 29.5
1902-3, " " .	39½	37½	30½	29
1903-4, " " .	39½	37½	30½	28½

* The price in the fifth zone, *i.e.*, the middle territory, is approximately the average price which the producers receive for their milk.

† This is a nominal rather than an actual change. With the dropping of the Boston price 2 cents the distance discount-schedule was also lowered 2 cents, so that producers received the same price.

Creameries and Milk Depots in Massachusetts.

LOCATION.	Name.	Co-operative or Proprietary.	Superintendent or Manager.
Amherst,	Amherst Creamery,	Co-operative,	F. J. Humphrey, agent.
Amherst,	Fort River,	Proprietary,	E. A. King.
Amherst,	Dairy School, Massachusetts Agricultural College,	Educational,	Prof. W. P. Brooks, director.
Ashby,	Ashby Creamery,	Co-operative,	C. Foster.
Ashfield,	Ashfield Creamery,	Co-operative,	Geo. G. Henry.
Belchertown,	Belchertown Creamery,	Co-operative,	M. G. Ward, president.
Boston, 394 Rutherford Avenue,	H. P. Hood & Son,	Proprietary,	H. P. Hood & Son.
Boston, 793 Boylston Street,	Walker-Gordon Laboratory,	Proprietary,	Walker-Gordon Laboratory Company.
Boston, 472 Rutherford Avenue,	D. Whiting & Sons,	Proprietary,	D. Whiting & Sons.
Boston, 388 Rutherford Avenue,	Boston Dairy Company,	Proprietary,	Boston Dairy Company.
Boston, 38 Huntington Avenue,	J. W. Hobart,	Proprietary,	J. W. Hobart.
Boston, 105 Holmes Avenue,	Hingham Dairy Association,	Proprietary,	Hingham Dairy Association.
Boylston,	Adelphia Creamery,	Proprietary,	E. M. Laws.
Bridgewater,	Plymouth County Creamery,	Proprietary,	H. A. Wilbor.
Brockton,	Brockton Dairy Company,	Proprietary,	Brockton Dairy Company.

Creameries and Milk Depots in Massachusetts — Continued.

LOCATION.	Name.	Co-operative or Proprietary.	Superintendent or Manager.
Cambridge, 158 Massachusetts Avenue,	C. Brigham & Co.,	Proprietary,	C. Brigham & Co.
Charlemont,	Charlemont Creamery,	Proprietary,	T. M. Totman.
Cheshire (P. O., Adams),	Graylock Creamery,	Co-operative,	C. J. Fales.
Cheshire,	Highland Creamery,	Proprietary,	Clayton W. Prince.
Cheshire,	West Shore Creamery,	Proprietary,	Seth W. Curtis.
Chester,	Chester Creamery,	Co-operative,	J. A. Lynn.
Conway,	Conway Creamery,	Co-operative,	W. A. Pease.
Cummington,	Cummington Creamery,	Co-operative,	S. W. Clark, president.
Easthampton,	Hampton,	Co-operative,	W. H. Wright, treasurer.
Egremont (P. O., North Egremont),	Egremont Creamery,	Co-operative,	H. O. Harrington.
Everett,	New England Creamery Company,	Proprietary,	N. E. Creamery Company.
Framingham (P. O., South Framingham),	Framingham Creamery,	Proprietary,	E. C. Cary.
Fitchburg, 26 Cushing Street,	Fitchburg Creamery,	Proprietary,	G. S. Learned.
Gardner,	Boston Dairy Company,	Proprietary,	Boston Dairy Company.
Groton,	Groton Creamery,	Proprietary,	Myron P. Swallow.
Haverhill,	Haverhill Creamery,	Proprietary,	G. H. McCormick.

Heath,	Heath Creamery,	Proprietary,	J. W. Stetson & Son.
Hinsdale,	Hinsdale Creamery,	Co-operative,	B. C. Bliss.
Lee,	Lee Creamery,	Proprietary,	P. A. Agnew.
Leominster,	Leominster Creamery,	Proprietary,	G. S. Wass.
Marlborough,	Este's Creamery,	Proprietary,	F. S. Este.
Monson,	Monson Creamery,	Proprietary,	W. C. Moulton.
Montague,	Montague Creamery,	Co-operative,	A. M. Lyman.
Monterey,	Berkshire Hill Creamery,	Co-operative,	Arthur Miner.
New Boston,	Berkshire Creamery,	Co-operative,	C. D. Sisson, Sandisfield
New Salem (P. O., Millington),	Millington Creamery,	Co-operative,	W. A. Moore.
North Adams,	N. A. Milk Association,	Proprietary,	L. D. Pierce.
North Brookfield,	North Brookfield Creamery,	Proprietary,	H. A. Richardson.
Northfield,	Northfield Creamery,	Co-operative,	L. R. Smith.
Orange (P. O., North Orange),	North Orange Creamery,	Co-operative,	Jonathan Holt.
Oxford,	Cold Spring Creamery,	Co-operative,	C. H. Wellington.
Shelburne Falls,	Shelburne Falls Creamery,	Proprietary,	Rufus Covell.
Southborough,	Deerfoot Farm,	Proprietary,	S. H. Howes.
Southfield,	Maple Lawn,	Proprietary,	A. C. Lockwood.
Springfield,	Springfield Milk Association,	Co-operative,	F. B. Allen.
Springfield,	Tait Bros.,	Proprietary,	Tait Bros.
Uxbridge,	Blackstone Valley Creamery,	Proprietary,	G. M. Aldrich, treasurer.

Creameries and Milk Depots in Massachusetts — Concluded.

LOCATION.	Name.	Co-operative or Proprietary.	Superintendent or Manager.
Uxbridge,	Farnum Creamery,	Proprietary,	Geo. A. Farnum.
Warren,	Worcester County Creamery Association,	Co-operative,	F. M. Lawrence, treasurer.
Westfield (P. O., Wyben),	Wyben Springs Creamery,	Co-operative,	C. H. Walcott.
West Newbury,	West Newbury Creamery,	Co-operative,	S. O. Ordway.
West Stockbridge (P. O., State Line),	State Line Creamery,	Proprietary,	Jas. Lee.
Williamsburg,	Williamsburg Creamery,	Co-operative,	E. T. Barrus, president.
Worthington (P. O., Ringville),	Worthington Creamery,	Co-operative,	W. R. Bates.
Worcester,	Wachusett Creamery,	Proprietary,	E. H. Thayer & Co.

EXPENSES.

The following is a classified statement of the expenses for the year : —

Bureau : compensation and travelling expenses,	\$325 10
Agents : compensation,	1,542 50
Agents : travelling expenses and samples purchased,	2,387 98
General agent : travelling expenses, postage, telephone,	496 68
Chemists : analyses, tests, court attendance,	1,864 00
Supplies and printing,	175 69
Educational,	208 05
	<hr/>
	\$7,000 00

P. M. HARWOOD,

General Agent.

Accepted and adopted as the report of the Dairy Bureau.

C. D. RICHARDSON.

JOHN M. DANFORTH.

A. M. LYMAN.

FOURTEENTH ANNUAL REPORT

OF THE

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 15, 1905.

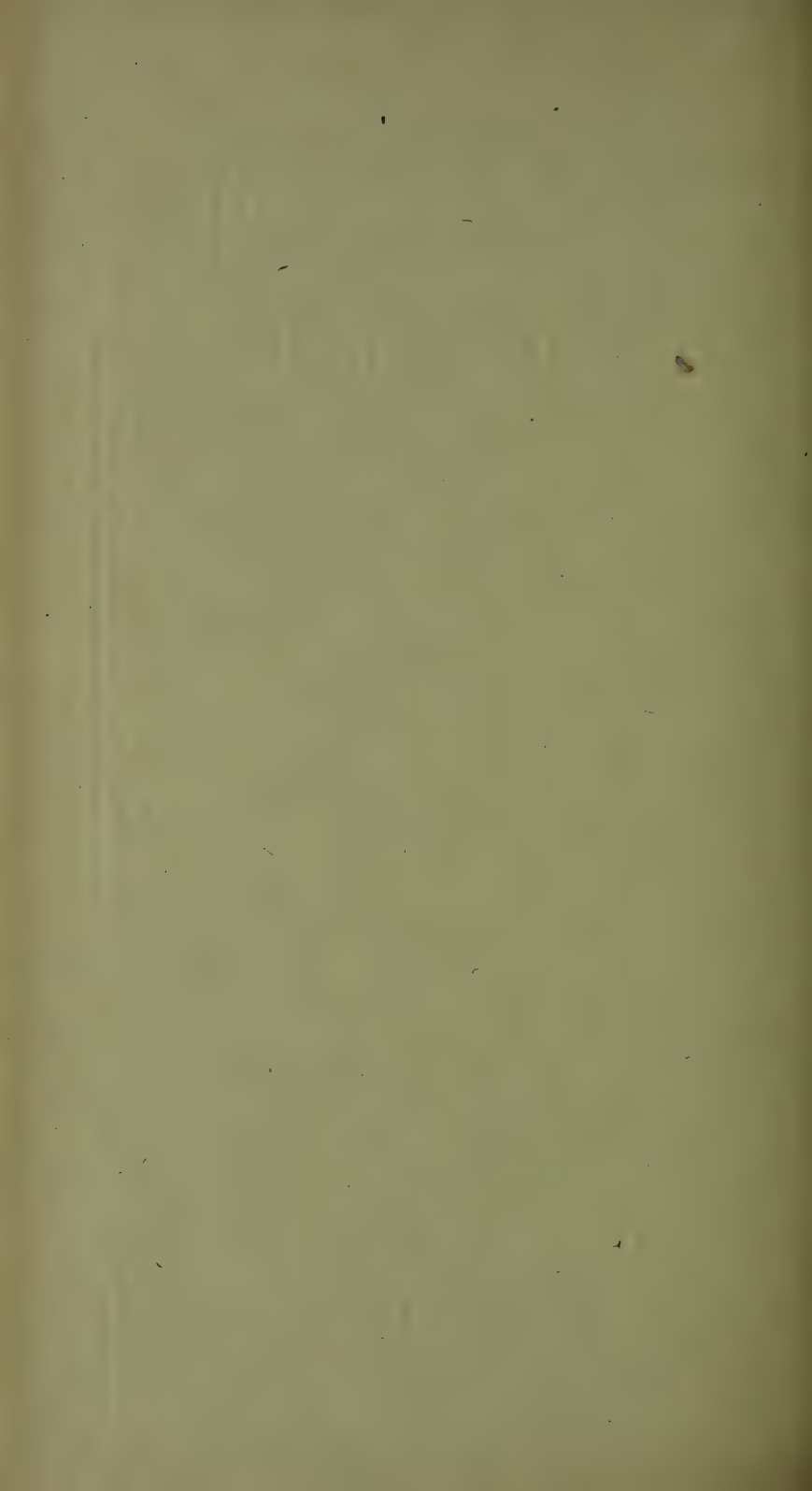


BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,

18 POST OFFICE SQUARE.

1905.



FOURTEENTH ANNUAL REPORT

OF THE

Mass.

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 15, 1905.



BOSTON :

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,

18 POST OFFICE SQUARE.

1905.

APPROVED BY
THE STATE BOARD OF PUBLICATION.

614.52115
D13n
1904
B

DAIRY BUREAU—1904.

CARLTON D. RICHARDSON, WEST BROOKFIELD, *Chairman.*
JOHN M. DANFORTH, LYNNFIELD CENTRE.
HENRY E. PAIGE, AMHERST.

Secretary.

J. LEWIS ELLSWORTH, *Executive Officer and Secretary of the
State Board of Agriculture.*

General Agent.

P. M. HARWOOD.
ADDRESS, ROOM 136, STATE HOUSE, BOSTON.

Commonwealth of Massachusetts.

REPORT.

Any one looking over the work of the Dairy Bureau for the past few years can but notice the different conditions which it has been called upon to meet, particularly along the line of police duties. In its early history the larger part of the work was in the prosecution of oleomargarine dealers. Later, renovated butter came to the front; this was followed by a curtailment in the oleomargarine trade. Last year violations of the renovated butter law reached a climax, and when it was found that the law was being enforced the dealers became more law-abiding, until to-day we have a healthier condition of law observance on the part of both oleomargarine and renovated butter dealers than we have had for some years. Another phase of work has appeared this year, as a result of which we have had 55 cases in court for the adulteration of cream with formaldehyde.

During the four years next preceding the one covered by this report there were many violations of law discovered, and these seemed to increase in number, though varying in kind, until last year the maximum of cases in court (289) was reached. The annual number of inspections has also constantly increased until this year, the State being covered more systematically and thoroughly than ever before; we have found but 168 cases of violation of law to enter in court.

The matter of educational work has been entered into more fully than formerly, with future promise of increased work along that line; and the Bureau has purchased special equipment for the purpose of giving stereopticon lectures and instruction upon questions relating to better production,

care, handling and a more rational consumption of dairy products.

There has been but one change in the membership of the Bureau. Mr. A. M. Lyman, whose term as a member of the Board of Agriculture expired in January, became no longer eligible, and was succeeded by Dr. Henry E. Paige. Mr. C. D. Richardson has continued as chairman and Mr. P. M. Harwood as general agent. Mr. A. W. Lombard has been regularly employed as agent, and five others have been temporarily employed, as occasion required. Most of the chemical work has been done by Dr. B. F. Davenport, although three other chemists have been incidentally employed in some of the oleomargarine cases.

The general agent has acted as judge in special dairy tests at two fairs, Sturbridge and Palmer; and, by special appointment by the Governor, was sent as delegate to the Pure Food Congress at St. Louis, September 26 to October 1, inclusive.

The work of the year has been as follows:—

Total number of inspections,	*5,594
Number of inspections where no samples were taken,	4,456
Number of samples of butter and oleomargarine, nearly all purchased,	887
Number of samples of milk and cream,	270
Cases in court,	168
Meetings addressed by the general agent,	28
Meetings addressed by the chairman of the Bureau,	15

Cases prosecuted during the year, by months and courts, with law violated, and results, are as follows:—

COURT.	Month.	Num-ber.	Law violated.	Con-victed.	Dis-charged.
Lowell, . . .	January, . .	4	Oleomargarine, . .	4	—
Quincy, . . .	January, . .	4	Renovated butter, . .	4	—
Cambridge, . .	January, . .	5	Renovated butter, . .	5	

* Nineteen extra samples were taken during inspections, therefore this total is nineteen less than the sum of the next three items.

COURT.	Month.	Num-ber.	Law violated.	Con-victed.	Dis-charged.
Malden, . .	January, .	2	Renovated butter, .	2	—
Haverhill, .	January, .	2	Renovated butter, .	2	—
Abington, .	February, .	2	Renovated butter, .	—	2
Waltham, .	February, .	2	Oleomargarine, .	2	—
New Bedford, .	February, .	20	Renovated butter, .	20	—
Newburyport, .	February, .	4	Renovated butter, .	4	—
Attleborough, .	March, .	2	Renovated butter, .	2	—
Brockton, .	March, .	6	Renovated butter, .	6	—
Worcester, .	March, .	4	Renovated butter, .	4	—
Lowell, . .	April, .	2	Renovated butter, .	2	—
Taunton, .	April, .	2	Renovated butter, .	2	—
Gloucester, .	May, . .	2	Renovated butter, .	2	—
Clinton, . .	May, . .	1	Oleomargarine, .	1	—
Lowell, . .	May, . .	1	Oleomargarine, .	1	—
Worcester, .	June, . .	3	Oleomargarine, .	3	—
Waltham, .	June, . .	1	Oleomargarine, .	1	—
Lowell, . .	June, . .	2	Oleomargarine, .	2	—
Boston, . .	June, . .	3	Oleomargarine, .	3	—
Lowell, . .	June, . .	1	Oleomargarine, .	1	—
Boston, . .	June, . .	8	Milk,	8	—
Lawrence, . .	August, .	1	Oleomargarine, .	1	—
Chelsea, . .	August, .	2	Renovated butter, .	2	—
Lawrence, .	September, .	9	Milk,	9	—
Worcester, .	September, .	2	Oleomargarine, .	2	—
Cottage City, .	September, .	5	Milk,	5	—
New Bedford, .	October, .	14	Milk,	14	—

COURT.	Month.	Num-ber.	Law violated.	Con- victed.	Dis- charged.
Fall River, .	October, .	12	Milk, . . .	12	—
Attleborough, .	October, .	14	Milk, . . .	14	—
New Bedford, .	November, .	4	Milk, . . .	4	—
Plymouth, .	November, .	7	Milk, . . .	7	—
New Bedford, .	December, .	10	Renovated butter, .	10	—
New Bedford, .	December, .	1	Oleomargarine, .	1	—
Worcester, .	December, .	4	Renovated butter, .	4	—
		168		166	2

The charges in the several cases in court for the year have been as follows :—

Selling renovated butter in unmarked packages,	73
Oleomargarine in imitation of yellow butter,	20
Oleomargarine served in restaurants without notifying guests,	2
Milk adulterated,	55
Milk below standard,	18

Total, 168

The following is a list of inspections without samples and the number of samples taken in the years 1900–1904 inclusive :—

YEAR.	Inspections without Samples.	Samples taken.
1900,	1,612	826
1901,	1,757	911
1902,	3,895	1,078
1903,	4,135	1,395
1904,	4,456	1,157
Totals,	15,855	5,367
Averages,	3,171	1,073+

The following is a list of the number of cases entered in court and also the number of convictions secured in the years 1900–1904 inclusive : —

YEAR.	Total Cases.	Convictions.
1900,	178	144
1901,	252	218
1902,	285	238
1903,	289	272
1904,	168	166
Totals,	1,162	1,038
Average convictions,	—	208—

OLEOMARGARINE.

The oleomargarine situation is always a matter of public interest. Considered on its merits, oleomargarine is one thing; as a counterfeit of butter, it is quite another. As showing the effect of the United States law of 1902, the following figures are of interest. The total output of oleomargarine in the United States for the year ending June 30, 1902, was 126,316,472 pounds; while that for the year ending June 30, 1904, was 48,071,480 pounds. Of this latter amount, only 1,639,102 pounds paid the ten-cent tax as colored goods. As showing the combined effect of the United States law and the enforcement of the State laws, the whole number of licenses as per last year's report was 352; this year 151, — a falling off of 201; a shrinkage of 76 + per cent in the number of "colored" and of 55— per cent in the number of "uncolored" licenses.

Notwithstanding this decrease, and the fact that oleomargarine can be sold uncolored under certain restrictions in this State, there have been attempts to violate the laws, both State and national. Three Rhode Island factories tried this in the early part of the year. Some of our chemists suc-

ceeded in discovering the presence of extraneous coloration, and the Bureau immediately set about prosecuting the dealers for selling oleomargarine in imitation of yellow butter. This was followed by the United States Internal Revenue Department taking action, with the result that two of the factories went out of business, the other apparently mending its ways. Obviously, this is a business that will bear watching at all times.

The number of persons who paid a United States tax the past three years is shown by the following table : —

YEARS ENDING JUNE 30.	Wholesale.	Retail.
1903 (colored),	1	24
1903 (uncolored),	7	314
1904 (colored),	—	17
1904 (uncolored),	9	326
Current year (colored),	—	4
Current year (uncolored),	9	138

RENOVATED BUTTER.

Undoubtedly butter will and should be renovated, as long as an inferior article, whether improperly made or improperly kept, exists. The business has grown, until, according to Secretary Wilson's report, 54,000,000 pounds was the product of the year ending June 30, 1904. Much of this is sold in such form that there can be no mistaking what it is; sometimes, however, it is sold for butter, put up in plain, unmarked wrappers. This latter method the law expressly forbids, and our prosecutions have been where such practices occur; and never, during the last two years, have we put a case in court where there were not two or more violations of the law, tending to show that it was the actual practice of the offender and not an accident.

EDUCATIONAL.

As has already been intimated, the Bureau is doing what it can to educate towards the production of clean milk, to better methods of handling, and to a better care of milk and its products in the hands of the purchaser. We have endeavored to lose no opportunity to enforce this idea upon the public. We believe there is improvement year by year, but recognize that there is room for more.

The producer naturally thinks that, if he could get a better price for his milk product, he could then afford to take more pains with it, which is undoubtedly true; and the consumer owes it to himself, to his family and to the welfare of everybody, not to so much question the price of milk and cream, within certain limits, as to insist upon its quality and condition. No one ought to expect milk containing 5 per cent fat for the same price as that containing 3.7 per cent fat. The producer ought to be able to sell his milk on its merits, just the same as the dry goods merchant does his cloth; and this should apply to freedom from deleterious bacteria, as well as to fat content. It seems as though an adjustment of prices along this line would assure to the consumer clean milk, and give the producer encouragement to produce better goods, and also a fair remuneration for his labor.

At the same time, it should be recognized that there is more than one way to increase income; and that clean milk, clean cream and first-class butter or cheese will increase consumption, and thereby enlarge the market for these most desirable articles of food. Many a business man has succeeded by increasing his production to a paying point without increasing the price.

Habits of cleanliness are not so expensive as they are hard to form; but, when once formed, it is believed that they pay for themselves in one's increased standing, reputation, improved physical health, mental power and moral worth; all of which contribute not only to happiness, but increase earning power as well.

Much of the cream brought into our market to-day comes

from without the State. Most of this is pasteurized cream. In a smaller way a still better product is produced under superior sanitary conditions, such, in fact, that the cream keeps readily ten or more days, and with no other treatment than to keep it sufficiently cool and tightly sealed. Some dealers warrant such cream to keep sweet two weeks, if held at or below 50° Fahrenheit. The use of glass or paper bottles, in sizes suited to the wants of the customer, in handling milk or cream, is of great advantage: first, because standard milk thus put up must still analyze to law requirements; second, because of convenience in handling; third, milk or cream put up in such bottles need not be opened until ready for use; and the consumer who wants the best of milk will never unseal a can or bottle until it is wanted, and will not allow unsealed bottles of milk or cream to stand in or out of a refrigerator for any considerable length of time.

It should not be overlooked that we are only a little more than twenty-four hours distant from the great milk-producing centre of our country, where the cost of production is much less than here; and that the day has now arrived when sanitarily produced cream can be shipped long distances, and in such condition that it will keep sweet a week or more after arrival, if properly cared for. Our local cream, however, prepared under like conditions, is good for some hours or days longer, and our cost of transportation less. Massachusetts to-day does not send beyond New England, except for pasteurized cream, some 6,000 to 8,000 gallons of which are brought from Iowa; but she does send thousands of dollars to neighboring States for cream which keeps well, for the reasons above given, and which, much of it, could be profitably produced within our own borders. It seems as if Massachusetts producers could get a large share of this trade, if they pushed for it.

The chairman of the Bureau has delivered fifteen and the general agent twenty-eight lectures, bearing upon dairy topics during the year.

BUTTER.

There has been, according to the best reports available, a large increase in the annual production of butter in this country, — probably ten per cent and possibly more in the

last two years. Ten per cent of the product of June 30, 1902, to June 30, 1903, which was estimated at 1,500,000,000 pounds, would amount to 150,000,000 pounds; the falling off of the oleomargarine product of 78,000,000 pounds, which it took an equal amount of butter to replace, would leave a net increase of 72,000,000 pounds of butter for the year 1903-1904 to depress the market. Then, too, the 54,000,000 pounds of renovated butter, elsewhere referred to, comes much nearer competition with creamery butter than would that which was renovated. This accounts to a considerable extent for the ruling low price, and argues that the farmer has not only had a larger market for his butter, but the consumer has not been obliged to pay an extra price for it.

The following table shows the extreme quotation for the best fresh creamery butter in a strictly wholesale way in the Boston market for the last eight years : —

	1904. Cents.	1903. Cents.	1902. Cents.	1901. Cents.	1900. Cents.	1899. Cents.	1898. Cents.	1897. Cents.
January, . . .	22.7	28.0	25.0	25.0	29.5	21.0	22.5	22.0
February, . . .	24.6	27.0	28.5	25.0	26.0	24.0	21.5	22.0
March, . . .	24.1	27.0	29.0	23.0	27.0	22.5	22.0	23.0
April, . . .	21.6	27.5	32.0	22.0	21.0	21.0	22.5	22.0
May, . . .	19.9	22.5	25.0	19.5	20.5	19.0	18.0	18.0
June, . . .	18.4	22.75	23.5	20.0	20.5	19.0	17.5	16.0
July, . . .	18.3	20.5	22.5	20.0	20.5	19.0	18.5	16.5
August, . . .	19.1	20.0	21.5	21.0	22.5	21.5	19.5	19.0
September, . . .	20.8	22.0	23.5	22.0	22.5	23.5	21.0	22.0
October, . . .	21.5	22.5	24.5	21.5	22.0	24.0	21.5	22.5
November, . . .	24.1	23.5	27.0	24.0	25.0	26.5	21.0	22.0
December, . . .	25.7	24.5	28.5	24.5	25.5	28.0	21.0	23.0
Averages, . . .	21.73	26.23	25.0	22.3	23.5	22.4	20.5	20.6

The Chamber of Commerce's figures regarding the butter business in Boston for 1903 and 1904 are as follows :—

	1904. Pounds.	1903. Pounds.
On hand January 1,	7,567,360	6,248,920
Receipts for the year,	55,435,207	54,347,056
Total supply,	63,002,564	60,595,976
Exports, deduct,	1,373,815	842,692
Net supply,	61,628,749	59,753,284
Stock on hand December 31, deduct,	5,612,592	7,567,360
Consumption,	56,016,157	52,185,924

MILK.

The wholesale price of milk in Boston the past year has been the same as in 1903, and with but few exceptions the retail price the same. If the condition of milk as it leaves the farm or arrives in the market is on the whole improving year by year, it is largely attributable to the agitation of the clean milk question by those especially interested.

As to violations of the milk laws, this department has been called upon to do more work than usual. In conjunction with Dr. Harrington 8 cases were brought in Boston, and with Milk Inspector Scanlon of Lawrence 9 cases in that city; 55 cases for formaldehyde in cream were brought in Cottage City, New Bedford, Fall River, Attleborough and Plymouth.

The following tables show the wholesale prices of milk sent to the Boston market for the last ten years :—

Summer Price.

	Gross Boston Price. Cents.	"Straight Price," Boston. Cents.	Gross to Pro- ducer, Fifth Zone. Cents.	Straight Price to Producer, Fifth Zone.* Cents.
1895, April to October, .	33	—	22	—
1896, " " .	33	—	22	—
1897, " " .	31†	—	22	—
1898, " " .	31	—	22	—
1899, " " .	31	—	22	—
1900, " " .	33	—	24	—
1901, " " .	33	31	24	22
1902, " " {	36 in April, July, August, September. 35 in May, June.	34 in April, July, August, September. 33 in May, June.	27 26	25 24
1903, " " .	37½	35½	28½	26½
1904, " " .	37½	35½	28½	26½

Winter Price.

1895-6, October to April,	37	—	26	—
1896-7, " " .	35	—	24	—
1897-8, " " .	33†	—	24	—
1898-9, " " .	33	—	24	—
1899-0, " " .	33	—	24	—
1900-1, " " {	37 to January. 35 to April.	—	28 to January. 26 to April.	—
1901-2, " " {	36 40 in December.	34½ 38½ in December.	27 31	25.5 29.5
1902-3, " " .	39½	37½	30½	29
1903-4, " " .	39½	37½	30½	28½
1904-5, " " .	39½	37½	30½	28½

* The price in the fifth zone, *i.e.*, the middle territory, is approximately the average price which the producers receive for their milk.

† This is a nominal rather than an actual change. With the dropping of the Boston price 2 cents the distance discount-schedule was also lowered 2 cents, so that producers received the same price.

Creameries and Milk Depots in Massachusetts.

LOCATION.	Name.	Co-operative or Proprietary.	Superintendent or Manager.
Amherst,	Amherst Creamery,	Co-operative,	F. J. Humphrey, agent.
Amherst,	Fort River,	Proprietary,	E. A. King.
Amherst,	Dairy School, Massachusetts Agricultural College.	Educational,	Prof. W. P. Brooks, director.
Ashby,	Ashby Creamery,	Proprietary,	C. Foster.
Ashfield,	Ashfield Creamery,	Co-operative,	Geo. G. Henry.
Belchertown,	Belchertown Creamery,	Co-operative,	M. G. Ward, president.
Boston, 494 Rutherford Avenue,	H. P. Hood & Son,	Proprietary,	H. P. Hood & Son.
Boston, 793 Boylston Street,	Walker-Gordon Laboratory Company.	Proprietary,	Walker-Gordon Laboratory Company.
Boston, 356 Rutherford Avenue,	D. Whiting & Sons,	Proprietary,	D. Whiting & Sons.
Boston, 388 Rutherford Avenue,	Boston Dairy Company,	Proprietary,	Boston Dairy Company.
Boston, 105 Holmes Avenue,	Hingham Dairy Association,	Proprietary,	Hingham Dairy Association.
Boylston,	Adelphia Creamery,	Proprietary,	E. M. Laws.
Bridgewater,	Plymouth County Creamery,	Proprietary,	H. A. Wilbor.
Cambridge, 158 Massachusetts Avenue.	C. Brigham Company,	Proprietary,	C. Brigham Company.

Charlemont,	Charlemont Creamery,	Proprietary,	T. M. Totman.
Cheshire (P. O., Adams),	Greylock Creamery,	Co-operative,	C. J. Fales, president.
Cheshire,	Highland Creamery,	Proprietary,	Clayton W. Prince.
Cheshire,	West Shore Creamery,	Proprietary,	Seth W. Curtis.
Chester,	Chester Creamery,	Co-operative,	W. S. Wilcox.
Conway,	Conway Creamery,	Co-operative,	W. A. Pease.
Cummington,	Cummington Creamery,	Co-operative,	S. W. Clark, president.
Easthampton,	Hampton,	Co-operative,	W. H. Wright, treasurer.
Egremont (P. O., North Egremont),	Egremont Creamery,	Co-operative,	H. O. Harrington.
Everett,	Hampton Creamery Company,	Proprietary,	Hampton Creamery Company.
Framingham (P. O., South Framingham).	Framingham Creamery,	Proprietary,	W. E. Marchant.
Fitchburg, 26 Cushing Street,	Fitchburg Creamery,	Proprietary,	G. S. Learned.
Gardner,	Boston Dairy Company,	Proprietary,	Boston Dairy Company.
Groton,	Lawrence Creamery,	Proprietary,	Myron P. Swallow.
Heath,	Heath Creamery,	Proprietary,	I. W. Stetson & Son.
Hinsdale,	Hinsdale Creamery,	Co-operative,	G. T. Plunkett.
Lee,	Lenox Creamery,	Proprietary,	P. A. Agnew.
Leominster,	Leominster Creamery,	Proprietary,	G. S. Wass.
Marlborough,	Este's Creamery,	Proprietary,	F. F. Este.

Creameries and Milk Depots in Massachusetts — (Concluded.)

Location.	Name.	Co-operative or Proprietary.	Superintendent or Manager.
Monson,	Monson Creamery,	Proprietary,	W. C. Moulton.
Montague,	Montague Creamery,	Co-operative,	A. M. Lyman.
Monterey,	Berkshire Hill Creamery,	Co-operative,	Henry Clapp, treasurer.
New Boston,	Berkshire Creamery,	Co-operative,	F. M. Rugg.
New Salem (P. O., Millington),	New Salem Co-operative Creamery Company.	Co-operative,	W. A. Moore.
North Brookfield,	North Brookfield Creamery,	Proprietary,	H. A. Richardson.
Northfield,	Northfield Creamery,	Co-operative,	L. R. Smith.
Orange (P. O., North Orange),	North Orange Creamery,	Co-operative,	Jonathan Holt.
Oxford,	Cold Spring Creamery,	Co-operative,	C. H. Wellington.
Shelburne Falls,	Shelburne Falls Creamery,	Proprietary,	Rufus Covell.
Southborough,	Deerfoot Farm,	Proprietary,	S. H. Howes.
Southfield,	Maple Lawn,	Proprietary,	A. C. Lockwood.
Springfield,	Springfield Milk Association,	Co-operative,	F. B. Allen.
Springfield,	Tait Bros.,	Proprietary,	Tait Bros.
Uxbridge,	Farnum Creamery,	Proprietary,	Geo. A. Farnum.

Warren,	.	.	.	Worcester County Creamery Association.	Co-operative,	F. N. Lawrence, treasurer.
Westfield (P. O., Wyben),	.	.	.	Wyben Springs Creamery,	Co-operative,	C. H. Wolcott.
West Newbury,	.	.	.	West Newbury Creamery,	Co-operative,	R. S. Brown.
Williamsburg,	.	.	.	Williamsburg Creamery,	Co-operative,	E. T. Barrus, president.
Worthington (P. O., Ringville),	.	.	.	Worthington Creamery,	Co-operative,	M. R. Bates.
Worcester,	.	.	.	Wachusett Creamery,	Proprietary,	E. H. Thayer & Co.

EXPENSES.

The following is a classified statement of the expenses for the year : —

Bureau : compensation and travelling expenses,	\$406 21
Agents : compensation,	1,584 75
Agents : travelling expenses and samples purchased,	2,438 54
General agent : travelling and necessary expenses,	581 02
Chemists : analyses, tests, court attendance,	1,100 00
Printing and supplies, including new outfit for educational work,	591 18
Educational,	298 30
<hr/>	
Total,	\$7,000 00

P. M. HARWOOD,

General Agent.

Accepted and adopted as the report of the Dairy Bureau.

CARLTON D. RICHARDSON.

JOHN M. DANFORTH.

HENRY E. PAIGE.

1905
B
PUBLIC DOCUMENT

. . . . No. 60.

FIFTEENTH ANNUAL REPORT

OF THE

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 15, 1906.



BOSTON :

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
18 POST OFFICE SQUARE.

1906.

FIFTEENTH ANNUAL REPORT

OF THE

Mass:

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 15, 1906.



BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,

18 POST OFFICE SQUARE.

1906.

APPROVED BY
THE STATE BOARD OF PUBLICATION.

614.32M3

D13a

1905

B

DAIRY BUREAU—1905.

CARLTON D. RICHARDSON, WEST BROOKFIELD, *Chairman.*

JOHN M. DANFORTH, LYNNFIELD CENTRE.

HENRY E. PAIGE, AMHERST.

Secretary.

J. LEWIS ELLSWORTH, *Executive Officer and Secretary of the
State Board of Agriculture.*

General Agent.

P. M. HARWOOD.

ADDRESS, ROOM 136, STATE HOUSE, BOSTON.

Commonwealth of Massachusetts.

REPORT.

The nature of the Bureau's work has not materially changed from that of the two preceding years. In the number of cases prosecuted, violations of the renovated butter, oleo-margarine and milk laws have been as in the order named. It gives us pleasure, however, to announce that violations of these laws are, on the whole, decreasing. In 1903 the Bureau made 5,524 inspections and secured 272 convictions; in 1904, 5,594 inspections and 166 convictions; while in 1905, with 5,836 inspections, the number of convictions was but 155. The total convictions, 593 for the three years, were secured from 596 violations of law, — a net loss of but a trifle over one-half of one per cent. This year there were no cases lost.

Many calls have been made upon this department during the year for lectures, use of the stereopticon, publications, dairy demonstrations, judging of dairy stock and dairy products, etc. These have been responded to so far as time and appropriation would permit, and as a result an increased amount of educational work has been done.

There has been no change in the membership of the Bureau. C. D. Richardson, reappointed by Governor Douglas, has remained as chairman; P. M. Harwood, re-elected by the Board of Agriculture, has continued as general agent; A. W. Lombard has served as agent, and four others have been temporarily employed. The chemical work has been done by Dr. B. F. Davenport. The summary of the work is as follows: —

Total number of inspections,	15,836
Number of inspections where no sample was taken,	4,887
Number of samples of butter and oleomargarine, nearly all purchased,	851
Number of samples of milk and cream, mostly purchased,	120
Cases in court,	155
Meetings addressed by the chairman of the Bureau,	15
Meetings addressed by the general agent,	21

Cases prosecuted during the year, by months and courts, with law violated, and results, are as follows : —

Court.	Month.	Number.	Law violated.	Convicted.	Discharged.
Walpole, .	January, .	2	Renovated butter, .	2	—
Worcester, .	January, .	2	Oleomargarine, .	2	—
Holyoke, .	January, .	2	Renovated butter, .	2	—
Quincy, .	January, .	4	Renovated butter, .	4	—
Fall River, .	February, .	15	Renovated butter, .	15	—
Haverhill, .	March, .	4	Renovated butter, .	4	—
Lowell, .	March, .	30	Renovated butter, .	30	—
Lowell, .	March, .	5	Oleomargarine, .	5	—
Charlemont, .	March, .	1	Milk,	1	—
Gloucester, .	March, .	6	Renovated butter, .	6	—
Worcester, .	April, .	8	Renovated butter, .	8	—
Worcester, .	April, .	2	Oleomargarine, .	2	—
Fitchburg, .	April, .	6	Renovated butter, .	6	—
Boston, ² .	April, .	1	{ General food laws, } { Boron preservative, }	1	—
Boston, ² .	April, .	18	Renovated butter, .	18	—
Cambridge, .	May, .	4	Renovated butter, .	4	—

¹ Twenty-two extra samples were taken during inspections, therefore this total is twenty-two less than the sum of the next three items.

² In connection with milk inspector of Boston.

COURT.	Month.	Num-ber.	Law violated.	Con-victed.	Dis-charged.
Worcester, ¹	May, . . .	8	Oleomargarine, .	8	—
New Bedford, .	June, . . .	4	Renovated butter, .	4	—
New Bedford, .	August, . .	4	Renovated butter, .	4	—
Haverhill, . .	August, . .	6	Milk,	6	—
New Bedford, .	September, .	3	Oleomargarine, .	3	—
New Bedford, .	September, .	2	Renovated butter, .	2	—
Worcester, . .	October, . .	8	Oleomargarine, .	8	—
Peabody, . . .	November, .	1	Milk,	1	—
Pittsfield, . .	December, .	5	Renovated butter, .	5	—
North Adams, .	December, .	4	Renovated butter, .	4	—
Totals, . . . .	. . . . .	155	. . . . .	155	

¹ In connection with milk inspector of Worcester.

The charges in the several cases in court for the year have been as follows :—

Selling renovated butter in unmarked packages,	118
Boron preservative in renovated butter,	1
Oleomargarine in imitation of yellow butter,	17
Oleomargarine sold as butter,	2
Oleomargarine sold in unstamped wrappers,	5
Oleomargarine sold without a license,	1
Oleomargarine sold without registering,	1
Milk below standard,	8
Interference with an officer,	2
Total,	155

The following is a list of inspections without samples and the number of samples taken in the years 1900–1905 inclusive : —

YEAR.	Inspections without Samples.	Samples taken.
1900,	1,612	826
1901,	1,757	911
1902,	3,895	1,078
1903,	4,135	1,395
1904,	4,456	1,157
1905,	4,887	971
Totals,	20,742	6,338
Averages,	3,457	1,056+

The following is a list of the number of cases entered in court and also the number of convictions secured in the years 1900–1905, inclusive : —

YEAR.	Total Cases.	Convictions.
1900,	178	144
1901,	252	218
1902,	285	238
1903,	289	272
1904,	168	166
1905,	155	155
Totals,	1,327	1,193
Average convictions,	—	199—

OLEOMARGARINE.

According to statistics of the Treasury Department at Washington, the output from the factories of the United States for the past six years is as follows:—

						Pounds.
Under the old law,	{	1900,	.	.	.	107,045,028
		1901,	.	.	.	104,943,856
		1902,	.	.	.	126,316,472
		1903,	.	.	.	71,804,102
Under the new law,	{	1904,	.	.	.	48,071,480
		1905,	.	.	.	49,880,982

In Massachusetts the Dairy Bureau had in court for violation of the oleo laws: in 1900, 178; in 1901, 215; in 1902 (new national law going into effect during this year), 90; in 1903, 56; in 1904, 22; and in 1905, 26.

There are indications that certain peddlers in this State are also manufacturers, in the sense that they buy uncolored oleomargarine, color it and peddle the same, which is not only violation of our own anti-color law, but is also violation of national laws. One such violator has served a jail sentence, imposed by the United States courts during the year.

There are also indications and even statistics which show that oleomargarine does not meet with great popular favor in its uncolored (natural) condition, but that its sales depend to a large extent upon the retailer being able to pass it off as butter, when colored in imitation of the latter article. For instance, the output of artificially colored oleomargarine in 1904 was 1,639,102 pounds for the whole country; in 1905 the output was 3,284,850 pounds, an increase of 1,645,743 pounds, which nearly covers the 1,809,502 pounds total in-

crease over the previous year, leaving but 153,784 pounds as the increase of uncolored goods during the year.

The oleomargarine business needs watching all the time.

The number of persons who paid a United States tax the past four years is shown by the following table:—

YEARS ENDING JUNE 30.	Wholesale.	Retail.
1903 (colored),	1	24
1903 (uncolored),	7	314
1904 (colored),	—	17
1904 (uncolored),	9	326
1905 (colored),	—	4
1905 (uncolored),	9	138
Current year (colored),	—	4
Current year (uncolored),	10	120

RENOVATED BUTTER.

The business of manufacturing renovated butter is still on the increase in this country, so far as the total output is concerned; but, according to Secretary Wilson, “The law [national] has not proven in any way detrimental to the makers of country butter, whose product forms the bulk of the stock worked up in factories.” The same authority reports an improvement of quality in renovated butter. The Commissioner of Internal Revenue at Washington reports that the output of process or renovated butter for the year ending June 1, 1905, was 61,366,400 pounds as against 55,747,736 pounds for the preceding fiscal year. The same report shows a falling off in the number of factories of about 30 per cent.

The real value of our State law lies in securing honest dealing, quite as much as in the protection of dairy interests; and the condition as we have found it during the past

two years is encouraging, inasmuch as the number of cases of violations of the renovated butter law found in this State during 1904 and 1905 together were 35 less than the number in 1903.

EDUCATIONAL.

For the past three years this Bureau, through lectures delivered by its general agent, and otherwise, has been encouraging the farmers to produce a better dairy product, especially a cleaner milk. We believe that it is for the interest of the dairyman, as well as for every one else that this be accomplished, and we do not believe that the production of clean milk is a prohibitively expensive operation. There can be no nobler work done by any one than improving the quality of food for our people, especially such an important and universal food as milk, thus adding to the health, happiness and general welfare of the human race. Milk can never be too clean or in too good condition for human consumption. The mortality of young children is yet far too high, especially in our large cities. Every possible effort should be made on the part of an intelligent public to improve this condition.

But, meanwhile, let us not be unmindful of existing facts, — facts sometimes overlooked when this question is considered, — one of which is, that there has been a constant improvement in the quality and condition of milk furnished the peddlers for the city of Boston for the last thirty years at least. Of this we have personal knowledge. The general public little realizes the efforts put forth during that time by the various milk contractors and others to urge better care at the farms, and these same contractors have spared no expense to improve their own plants year after year, by adding latest and most up-to-date appliances.¹ Only those who have personally observed through the period mentioned know these facts ; the general public has hardly kept informed. Then, too, a considerable number of well-known, public-spir-

¹ Mr. Tower, late of the firm of C. Brigham Company, spent most of his time during the last few years of his life in going about among farmers and improving conditions at the stables, and as a result many separate milk rooms were built.

ited individuals have come to the front in recent years, with their sanitary dairies ; agricultural colleges and experiment stations have done their work ; the national government has issued circulars and bulletins ; farmers' institute lecturers and grange speakers have expostulated ; physicians and city boards of health have been active ; not to forget the work now being done by the various State departments. All these have yielded results, until it is safe to say that not only has the condition of the milk supply of the city of Boston improved steadily for the last thirty years, but never before was the public so sure of getting a fairly clean article as it is to-day ; and it may reasonably be questioned whether Massachusetts has a peer among all her sister States in the quality and marketable condition of her milk supply, though perhaps far from perfect at that. This to our mind is encouraging, and also the very best argument for still better farm conditions.

Of course there are some filthy dairies, — dairies perhaps where owners should and may go out of the business for lack of requisite neatness of habit, and most dairies can be improved ; but it seems that the time is at hand when the shafts of reformers should be also aimed at consumers in our cities and towns, to the end that the milk be properly cared for and suitably prepared for consumption, and that the milk producer be not called upon to bear undue share of blame for child mortality. He certainly may have much to answer for, but he is not to blame for neglected children, filthy rooms, stuffy atmosphere, cold milk, irregular meals, improper or insufficient quantity, the lashes of poverty or the whims of fashion, both of which often place the child in the hands of a third and more or less disinterested and not unfrequently incompetent person, — and many other things which might be named. The campaign of true progress is the one which keeps ever in view the mutual benefit of both producer and consumer ; thus making no undue demands or reflections upon the one, and observing the rightful needs of the other. It is along this line that this Bureau is conducting its educational work. We have during the year offered many suggestions, some of which at least have been adopted ;

and we have received, both verbally and by letter, very cordial appreciation of our efforts.

In support of our contention of an improved condition, we quote from the last annual report of the Boston Board of Health. In 1875, 43.84 per cent of all the deaths were of children under five years of age, and in 1904 the percentage was 28.87; under one year of age in 1875 the percentage was 24.98, and in 1904 it was 20.52. Thus it will be seen that the death rate among children under five years has been reduced in that time practically one-third, and of children under one year about one-fifth. Of course milk is not the only cause of this decrease, any more than it is the cause of the entire mortality; but as 80 to 85 per cent of children are brought up on cow's milk, this food may possess the controlling influence.

Taking the State as a whole, we find that in 1875 the death rate of children under one year per 1,000 living at that age was 226.56, and in 1900 it was 190.10, — an improvement of nearly one-sixth. In 1875 the death rate of children under five years of age per 1,000 living at that age was 73.96, and in 1900, 57.79, — a reduction of practically one-fifth.

These figures for 1900 and 1904 are the latest obtainable, and 1875 is taken for comparison because it was in that year that the firm of C. Brigham Company opened up a fresh milk supply in Barre, Hardwick and New Braintree, which was the beginning of our experience with the milk business of Boston. We realize that figures such as these are at best simply pointers, but it is gratifying to know that they all point in the right direction.

The price paid the farmer to-day is practically the same as in 1875. The quality of the milk has been much improved, as has been shown. Is not the farmer, then, in a fair position to demand a better price, as a matter of justice, and can such demand, in any spirit of justice, be refused?

BUTTER.

The butter market of 1905 has been in some respects remarkable. The appended tables, relating to the Boston market, virtually tell the story. With but about five and

one-half million pounds on hand Jan. 1, 1905, nearly two million pounds less than the year previous, followed by four successive months of light receipts and consequent high prices, the arrival of May witnessed the beginning of unparalleled receipts, which continued, with the exception of November, unbroken throughout the year, leaving, after unprecedented consumption, a stock on hand of ten million pounds, or almost double the amount on hand the year previous. High as butter was during the early part of the year, the average price for the year is below that for 1902 and 1903, but is well above the average of 1904. As a result of the high price in the early part of the year, there was a stimulated activity in "imitations," which resulted in increased prosecutions wherever the law was broken.

The following table shows the average quotation for the best fresh creamery butter in a strictly wholesale way in the Boston market for the last eight years:—

	1905. Cents.	1904. Cents.	1903. Cents.	1902. Cents.	1901. Cents.	1900. Cents.	1899. Cents.	1898. Cents.
January, . .	28.0	22.7	28.0	25.0	25.0	29.5	21.0	22.5
February, . .	31.6	24.6	27.0	28.5	25.0	26.0	24.0	21.5
March, . .	28.0	24.1	27.0	29.0	23.0	27.0	22.5	22.0
April, . .	29.1	21.6	27.5	32.0	22.0	21.0	21.0	22.5
May, . .	23.9	19.9	22.5	25.0	19.5	20.5	19.0	18.0
June, . .	20.7	18.4	22.75	23.5	20.0	20.5	19.0	17.5
July, . .	20.6	18.3	20.5	22.5	20.0	20.5	19.0	18.5
August, . .	21.6	19.1	20.0	21.5	21.0	22.5	21.5	19.5
September, .	21.2	20.8	22.0	23.5	22.0	22.5	23.5	21.0
October, . .	22.1	21.5	22.5	24.5	21.5	22.0	24.0	21.5
November, .	23.0	24.1	23.5	27.0	24.0	25.0	26.5	21.0
December, .	23.9	25.7	24.5	28.5	24.5	25.5	28.0	21.0
Averages, .	24.47	21.73	26.23	25.0	22.3	23.5	22.4	20.5

The Chamber of Commerce's figures regarding the butter business in Boston for 1904 and 1905 are as follows :—

	1905. Pounds.	1904. Pounds.
Carried over,	5,612,592	7,567,860
Receipts for January,	2,097,952	2,345,447
Receipts for February,	2,015,265	2,400,922
Receipts for March,	2,698,064	3,087,017
Receipts for April,	2,393,951	2,658,679
Receipts for May,	5,260,758	3,776,547
Receipts for June,	10,696,890	8,076,244
Receipts for July,	10,068,394	8,513,155
Receipts for August,	10,376,813	7,480,505
Receipts for September,	7,743,859	6,512,408
Receipts for October,	6,549,119	4,554,447
Receipts for November,	3,135,224	3,238,005
Receipts for December,	3,688,555	2,791,828
Total supply,	72,337,436	63,002,564
Exports for twelve months, deduct,	2,551,319	1,373,815
Net supply,	69,786,117	61,628,749
Stocks in storage December 30, deduct,	10,189,575	5,612,592
Consumption for twelve months,	59,596,542	56,016,157
Increase in consumption for 1905,	3,580,385	

MILK.

There is considerable variation in the price of milk, as now sold in Massachusetts. The retail price of average market milk throughout the State varies from 5 to 8 cents per quart. In Boston, "fancy" or "sanitary" milk, so called, sells at from 10 to 12 cents per quart and upward.

Milk sold by the half-pint jar at 5 cents means 20 cents per quart; that sold by the glass at 5 cents, usually the same. At 10 cents per glass, holding one-third quart, the price rises to 30 cents per quart; and sanitary milk, modified and put up by prescription for babies' use, ranges from 25 to 50 cents per quart. In the suburbs of Boston the usual price which the householder has to pay is 7 to 8 cents for average milk, and 9 to 10 cents for sanitary milk. There is a constantly increasing number of small dairies springing up among the wealthy fancy farmers in the eastern part of the State, which are producing sanitary milk and cream, and getting an extra price for it. Even a few farmers of limited means are now undertaking the project, as a business venture.

There is also variation in the wholesale price of milk, which the producer receives, dependent mainly upon his distance from market. The farmer who sells milk to Boston contractors is paid according to his distance from market, the average distance being 56 to 76 miles; and, as may be seen by the tables, the average price to the farmer in this zone for milk delivered to his local railroad station is $26\frac{1}{2}$ cents in summer and $28\frac{1}{2}$ cents in winter, provided he does not exceed his limit (see footnote with table); but in case the contractor returns clean cans, $\frac{1}{2}$ cent each is, under the present contract, to be deducted for washing. The farmer is obliged to put up $8\frac{1}{2}$ quarts for a can. Thus his average price per quart through the year is $27\frac{1}{2}$ cents, divided by $8\frac{1}{2}$, or practically $3\frac{1}{4}$ cents at the railroad station or 3 cents at the farm. Farmers 150 miles out get $2.88+$ cents per quart, and those 25 miles out get $3.47+$ cents per quart, for average milk. In some instances producers wholesaling their milk direct to peddlers get 4 to $4\frac{1}{2}$ cents per quart for it.

High-class sanitary milk is rarely ever wholesaled. In the only case we know of the price quoted was $8\frac{1}{2}$ cents, which was said to pay expenses, but yielded no profit.

There is no question but that the average price for average milk, which really means the bulk of all the milk sold in Massachusetts, is far too low, so far as the return to the producer is concerned; and it is undoubtedly true that no important food is cheaper than milk, at present prices. Even

the consumer can easily afford to pay an increased price for the better article of milk now demanded.

The following table shows the wholesale price of milk sent to the Boston market for the last ten years :—

Summer Price.

	Gross Boston Price. Cents.	"Straight Price," Boston. Cents.	Gross to Pro- ducer, Fifth Zone. Cents.	Straight Price to Producer, Fifth Zone. ¹ Cents.
1896, April to October, .	33	—	22	—
1897, " " .	31 ²	—	22	—
1898, " " .	31	—	22	—
1899, " " .	31	—	22	—
1900, " " .	33	—	24	—
1901, " " .	33	31	24	22
1902, " " {	36 in April, July, August, September. 35 in May, June.	34 in April, July, August, September. 33 in May, June.	27 26	25 24
1903, " " .	37½	35½	28½	26½
1904, " " .	37½	35½	28½	26½
1905, ³ " " .	37½	35½	28½	26½

Winter Price.

1896-7, October to April,	35	—	24	—
1897-8, " "	33 ²	—	24	—
1898-9, " "	33	—	24	—
1899-0, " "	33	—	24	—
1900-1, " " {	37 to January. 35 to April.	—	28 to January. 26 to April.	—
1901-2, " " {	36 40 in December.	34½ 38½ in December.	27 31	25.5 29.5
1902-3, " "	39½	37½	30½	29
1903-4, " "	39½	37½	30½	28½
1904-5, " "	39½	37½	30½	28½
1905-6, ⁴ " "	39½	37½	30½	28½

¹ The price in the fifth zone, *i.e.*, the middle territory, is approximately the average price which the producers receive for their milk.

² This is a nominal rather than an actual change. With the dropping of the Boston price 2 cents the distance discount-schedule was also lowered 2 cents, so that producers received the same price.

³ The so-called Knapp tables, allowing a variation of 16¾ per cent either way from the given basis of uniform production, were made a part of this year's contract. Should the producer exceed this limit, up to a certain point the penalty is that he is obliged to take 1 cent less per can for his entire month's production; if he exceeds that point or second limit, another cent less and so on.

⁴ It was agreed that in case the cans were washed and returned clean, ½ cent per can should be deducted.

CREAMERIES AND MILK DEPOTS.

Appended we give a revised list of the principal creameries and milk depots owned and operated by Massachusetts individuals and corporations. There are in this State, in addition to these, a number of distributing plants for creameries owned and operated in other States. For instance, the Maine Creamery Company of Bangor, Me., has offices at 12 Foster Wharf, Boston. The Turner Centre Creamery of Auburn, Me., has distributing houses in Boston, Worcester, Taunton and Lowell, and ships to these points butter, cream, and to one at least skimmed milk.¹ The New England Creamery of Livermore Falls, Me., distributes through a Massachusetts company of the same name in Everett, which also distributes the "Hampden Creamery" goods. The Lyndonville Creamery of Lyndonville, Vt., has a plant at Watertown, from which it distributes milk, cream and butter. J. L. Humphrey, Jr., has four plants, one each in New Bedford, Fall River, Taunton and Brockton, for the distribution of butter and renovated butter (and sometimes cream) from his Iowa creameries. The Armours, Swifts, Hammonds, Morrisises and other large packing houses, all representing western-made goods, distribute quantities of butter and renovated butter from their numerous establishments scattered over the State. Some of these also put out oleomargarine. Besides these, there is a considerable number of creamery companies and so-called creameries which buy their stock of producers in this and other States. These in the aggregate do a large business. Other private dairies or creameries also have town offices, restaurants, etc.

¹ Pasteurized skimmed milk and cream are put together in the proper proportions required for standard milk, in the Boston plant, and the milk thus made is placed upon the market.

Creameries and Milk Depots in Massachusetts.

LOCATION.	Name.	Co-operative or Proprietary.	Superintendent or Manager.
Amherst,	Amherst Creamery,	Co-operative, .	F. J. Humphrey, agent.
Amherst,	Fort River,	Proprietary, .	E. A. King.
Amherst,	Dairy School, Massachusetts Agricultural College.	Educational, .	Prof. W. P. Brooks, director.
Ashfield,	Ashfield Creamery,	Co-operative, .	Geo. G. Henry,
Belchertown,	Belchertown Creamery,	Co-operative, .	M. G. Ward, president.
Boston, 494 Rutherford Avenue,	H. P. Hood & Sons,	Proprietary, .	H. P. Hood & Sons.
Boston, 793 Boylston Street,	Walker-Gordon Laboratory Company.	Proprietary, .	Walker-Gordon Laboratory Company.
Boston, 556 Rutherford Avenue,	D. Whiting & Sons,	Proprietary, .	D. Whiting & Sons.
Boston, 388 Rutherford Avenue,	Boston Dairy Company,	Proprietary, .	Boston Dairy Company.
Boylston,	Adelphia Creamery,	Proprietary, .	E. M. Laws.

Creameries and Milk Depots in Massachusetts — Continued.

LOCATION.	Name.	Co-operative or Proprietary.	Superintendent or Manager.
Bridgewater,	Plymouth County Creamery, . .	Proprietary, .	S. Neilson Houlburg.
Cambridge, 158 Massachusetts Avenue.	C. Brigham Company,	Proprietary, .	C. Brigham Company.
Charlemont,	Charlemont Creamery,	Proprietary, .	T. M. Totman.
Cheshire (P. O., Adams), . .	Greylock Creamery,	Co-operative, .	C. J. Fales, president.
Cheshire,	Highland Creamery,	Proprietary, .	Clayton W. Prince.
Cheshire,	West Shore Creamery,	Proprietary, .	Seth W. Curtis.
Chester,	Chester Creamery,	Co-operative, .	W. S. Wilcox.
Conway,	Conway Creamery,	Proprietary, .	Boston Dairy Company.
Cummington,	Cummington Creamery,	Co-operative, .	S. W. Clark, president.
Easthampton,	Hampton,	Co-operative, .	W. H. Wright, treasurer.
Egremont (P. O., North Egremont), . .	Egremont Creamery,	Co-operative, .	H. O. Harrington.
Everett,	Hampton Creamery Company, . .	Proprietary, .	Hampton Creamery Company.

Frammingham (P. O., South Frammingham).	Echo Farm Company, . . .	Proprietary, .	W. E. Marchent.
Fitchburg, 26 Cushing Street,	Fitchburg Creamery, . . .	Proprietary, .	G. S. Learned.
Gardner, . . .	Boston Dairy Company, . . .	Proprietary, .	Boston Dairy Company.
Groton, . . .	Lawrence Creamery, . . .	Proprietary, .	Myron P. Swallow.
Heath, . . .	Heath Creamery, . . .	Proprietary, .	I. W. Stetson & Son.
Hinsdale, . . .	Hinsdale Creamery, . . .	Co-operative, .	B. C. Bliss.
Lee, . . .	Lenox Creamery, . . .	Proprietary, .	P. A. Agnew.
Leominster, . . .	Leominster Creamery, . . .	Proprietary, .	G. H. Wass.
Marlborough, . . .	Este's Creamery, . . .	Proprietary, .	F. F. Este.
Monson, . . .	Monson Creamery, . . .	Proprietary, .	W. C. Moulton.
Montague, . . .	Montague Creamery, . . .	— ¹	A. M. Lyman.
Monterey, . . .	Berkshire Hill Creamery, . . .	Co-operative, .	D. A. Campbell.
New Boston, . . .	Berkshire Creamery, . . .	Co-operative, .	N. H. Snow, president.

¹ Leased and operated by Tait Bros., Springfield.

Creameries and Milk Depots in Massachusetts—Concluded.

LOCATION.	Name.	Co-operative or Proprietary.	Superintendent or Manager.
New Salem (P. O., Millington), . . .	New Salem Co-operative Creamery Company.	Co-operative, .	W. A. Moore.
North Brookfield, . . .	North Brookfield Creamery, . . .	Proprietary, .	H. A. Richardson.
Northfield, . . .	Northfield Creamery, . . .	Co-operative, .	L. R. Smith.
Orange (P. O., North Orange), . . .	North Orange Creamery, . . .	Co-operative, .	C. E. Dunbar.
Shelburne Falls, . . .	Shelburne Falls Creamery, . . .	Proprietary, .	Cressy & Campbell.
Southborough, . . .	Deerfoot Farm, . . .	Proprietary, .	S. H. Howes, manager.
Southfield, . . .	Maple Lawn, . . .	Proprietary, .	A. C. Lockwood.
Springfield, . . .	Springfield Milk Association, . . .	Co-operative, .	F. B. Allen.
Springfield, . . .	Tait Bros., . . .	Proprietary, .	Tait Bros.
Uxbridge, . . .	Farnum Creamery, . . .	Proprietary, .	Geo. A. Farnum.
Warren, . . .	Worcester County Creamery Association.	Co-operative, .	F. N. Lawrence, treasurer.

Westfield (P. O., Wyben), . . .	Wyben Springs Creamery, . . .	Co-operative, . . .	C. H. Wolcott.
West Newbury, . . .	West Newbury Creamery, . . .	Co-operative, . . .	R. S. Brown, treasurer.
Williamsburg, . . .	Williamsburg Creamery, . . .	Co-operative, . . .	E. T. Barrus, president.
Worthington (P. O., Ringville), . . .	Worthington Creamery, . . .	Co-operative, . . .	M. R. Bates, superintendent.
Worcester, . . .	Wachusett Creamery, . . .	Proprietary, . . .	E. H. Thayer & Co.

EXPENSES.

The following is a classified statement of the expenses for the year : —

Bureau: compensation and travelling expenses,	. . . . .	\$488 92
Agents: compensation,	. . . . .	1,953 00
Agents: travelling expenses and samples purchased,	. . . . .	2,493 12
General agent: travelling and necessary expenses,	. . . . .	501 32
Chemists: analyses, tests, court attendance,	. . . . .	864 50
Printing and supplies,	. . . . .	195 18
Educational,	. . . . .	503 96
Total,	. . . . .	<hr/>\$7,000 00

P. M. HARWOOD,

General Agent.

Accepted and adopted as the report of the Dairy Bureau.

C. D. RICHARDSON.
JOHN M. DANFORTH.
HENRY E. PAIGE.

1137
1906
B
PUBLIC DOCUMENT

. . . . No. 60.

SIXTEENTH ANNUAL REPORT

OF THE

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 15, 1907.



BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
18 POST OFFICE SQUARE.

1907.

SIXTEENTH ANNUAL REPORT

OF THE

Mass.

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 15, 1907.



BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,

18 POST OFFICE SQUARE.

1907.

APPROVED BY
THE STATE BOARD OF PUBLICATION.

614.32M3

B132

1906

B

DAIRY BUREAU—1906.

CARLTON D. RICHARDSON, WEST BROOKFIELD, *Chairman.*

JOHN M. DANFORTH, LYNNFIELD CENTRE.

HENRY E. PAIGE, AMHERST.

Secretary.

J. LEWIS ELLSWORTH, *Executive Officer and Secretary of the
State Board of Agriculture.*

General Agent.

P. M. HARWOOD.

ADDRESS, ROOM 136, STATE HOUSE, BOSTON.

Commonwealth of Massachusetts.

REPORT.

By act of the Legislature of 1905 a new fiscal year for State departments was established, beginning Dec. 1, 1906, therefore this report covers only eleven months, — Jan. 1 to Dec. 1, 1906. Hereafter reports will cover twelve months, from December 1, annually.

This year we have had occasion to bring a total of 113 cases in court, against 155 last year, 168 in 1904 and 289 in 1903, notwithstanding increased and thorough inspection. Therefore, we note a reduced tendency to violate the dairy laws. The number of oleomargarine licenses has fallen off from that reported in previous years ; but, as we have brought cases under a wider range of statute violations, the number of prosecutions has increased.

It is a pleasure to be able to announce that the year has been one of general improvement along lines of sanitary milk production, especially as regards general market milk ; and due credit for this should be given to the State Board of Health for its inspection of dairies, to the farmers who have responded to the suggestions made, and to the improved plants and methods of the Boston milk contractors. A beginning has been made by interested parties during the year in the matter of certified milk. What the result of this movement will be it is yet too early to determine.

This Bureau has worked unceasingly for a better dairy product, and the calls for lectures along this line have greatly increased over any previous year. We believe that fundamentally the farmers should reform their own condi-

tions, and that it is largely due to their failure to do so that inspection and regulation become necessary. The chairman of the Bureau has responded to fifteen and the general agent to forty-five different calls within the State. Expert dairy work has been done at various fairs and other places during the year. The Bureau has also inspected many of the creameries and milk depots throughout the State.

After a careful review of the dairy situation, we believe that the Massachusetts dairymen, a majority of whom are producers of market milk, should unite in a State organization for self-education and betterment. The lack of such organization, faith in one another and general tone and confidence is to a large degree responsible for present conditions. To be sure, we have the Massachusetts Creamery Association, the Massachusetts Cattle Owners Association, etc.; but a State organization of broader scope is needed, one open to membership for all dairymen in the State, holding annual meetings and institutes to be addressed by the best experts this or any country affords, where butter and cheese may be exhibited and scored in various classes and suitable prizes awarded, where milk and cream produced under different conditions may be entered for competition for prizes for flavor, cleanliness, keeping quality, etc., where the most improved dairy machinery and methods can be exhibited and demonstrated, and where leading questions of the hour can be discussed, — to the end that Massachusetts dairymen may become united, better informed, more enthusiastic and more successful.

The personnel of the Bureau has remained the same as in previous years. H. E. Paige has been reappointed by Governor Guild, C. D. Richardson has continued as chairman, J. Lewis Ellsworth as secretary, P. M. Harwood as general agent, A. W. Lombard as agent, B. F. Davenport as chemist, and eight others have been temporarily employed during some part of the year.

The summary of the year's work is as follows: —

Total number of inspections,	15,628
Number of inspections where no sample was taken,	4,985
Number of samples of butter and oleomargarine, nearly all purchased,	583
Number of samples of milk and cream, mostly purchased,	65
Cases in court,	113
Meetings addressed by the chairman of the Bureau,	15
Meetings addressed by the general agent,	45

Cases prosecuted during the eleven months ending Nov. 30, 1906, by months and courts, with law violated, and results, are as follows : —

Court.	Month.	Number.	Law violated.	Convicted.	Discharged.
Holyoke, .	January, .	6	Renovated butter, .	6	—
Fall River, .	January, .	8	Renovated butter, .	8	—
Fall River, .	January, .	3	Oleomargarine, .	3	—
Quincy, .	January, .	8	Renovated butter, .	8	—
Lawrence, .	January, .	2	Renovated butter, .	2	—
Walpole, .	January, .	2	Renovated butter, .	2	—
Worcester, .	February, .	6	Renovated butter, .	6	—
Attleborough, .	February, .	2	Renovated butter, .	—	2
Amesbury, .	March, .	4	Renovated butter, .	4	—
Lowell, .	March, .	10	Oleomargarine, .	10	—
Newburyport, .	March, .	2	Renovated butter, .	2	—
Gloucester, .	March, .	2	Renovated butter, .	2	—
Boston, ² .	March, .	2	Renovated butter, .	2	—
Charlestown, .	March, .	1	Renovated butter, .	1	—
Holyoke, .	April, .	2	Renovated butter, .	2	—
Haverhill, .	April, .	2	Renovated butter, .	2	—

¹ Five extra samples were taken during inspections, therefore this total is five less than the sum of the next three items.

² In connection with Milk Inspector Jordan of Boston.

Court.	Month.	Number.	Law violated.	Convicted.	Discharged.
Hyde Park, .	April, .	2	Renovated butter, .	2	—
Amesbury, .	April, .	1	Oleomargarine, .	1	—
Newburyport, .	April, .	2	Oleomargarine, .	2	—
Fall River, .	May, .	14	Oleomargarine, .	14	—
New Bedford, .	May, .	6	Renovated butter, .	8	—
New Bedford, .	May, .	2	Oleomargarine, .	2	—
Somerville, .	June, .	3	Oleomargarine, .	3	—
Worcester, .	July, .	4	Oleomargarine, .	3	1
Southbridge, ¹ .	August, .	1	Oleomargarine, .	1	—
Waltham, .	August, .	3	Oleomargarine, .	3	—
Chelsea, .	October, .	7	Milk,	7	—
Grafton, ² .	November, .	1	Milk,	1	—
Lowell, .	November, .	5	Oleomargarine, .	5	—
Totals,		113		110	3

¹ In connection with Deputy Sheriff Jacobs of Southbridge.

² In connection with Milk Inspector Berg of Worcester.

The charges in the several cases in court for the eleven months ending Nov. 30, 1906, have been as follows:—

Selling renovated butter in unmarked packages,	57
Oleomargarine in imitation of yellow butter,	13
Oleomargarine sold as butter,	2
Oleomargarine sold in unstamped wrappers,	2
Oleomargarine: stores without posted signs,	13
Oleomargarine: stores without placard on exposed contents, .	8
Oleomargarine: peddling without signs on wagons,	3
Oleomargarine sold in restaurants without notice,	7
Milk below standard,	5
Milk containing boron preservative,	3
Total,	113

The following is a list of inspections without samples and the number of samples taken in the years 1900–1906, inclusive : —

YEAR.	Inspections without Samples.	Samples taken.
1900,	1,612	826
1901,	1,757	911
1902,	3,895	1,078
1903,	4,135	1,395
1904,	4,456	1,157
1905,	4,887	971
1906,	4,985	576
Totals,	25,727	6,914
Averages,	3,675+	987+

The following is a list of the number of cases entered in court and also the number of convictions secured in the years 1900–1906, inclusive : —

YEAR.	Total Cases.	Convictions.
1900,	178	144
1901,	252	218
1902,	285	238
1903,	289	272
1904,	168	166
1905,	155	155
1906,	113	110
Totals,	1,440	1,303
Average convictions,	—	186+

OLEOMARGARINE.

The effect of the national law, and its enforcement, on the oleomargarine output of the United States, is graphically set forth by the following figures: under the old law, for the year ending June 30, 1902, the output was 126,316,472 pounds; while under the new law, for the year ending June 30, 1903, it was 71,804,102 pounds; for that ending June 30, 1904, it was 48,071,480 pounds; for that ending June 30, 1905, it was 49,880,982 pounds and for that ending June 30, 1906, it was 53,146,659 pounds.

In 1903 there were in Massachusetts 24 licenses to sell colored oleomargarine, while in 1906 there was but 1 such license, and the parties taking out that license have apparently given up attempts to use it. In 1904 there were 326 licenses issued for the sale of uncolored oleomargarine, while at the same date in 1906 there were but 90 such licenses issued. In Boston the oleomargarine receipts were 16,494 packages, as against 22,808 packages in 1905. This department has had in court during the year 48 cases for violations of oleo laws, as will be seen by the tabulated statement elsewhere given.

At the present writing, with the price of butter unusually high, there appears a prospect of increased activity in the oleo business.

RENOVATED BUTTER.

The renovated butter trade shows an increased disposition to comply with the law. In 1900 the number of violations of law prosecuted was 226; in 1904, 73; in 1905, 118; while in 1906, for eleven months, the number was 57. Secretary Wilson of the national department reports an improvement in the sanitary condition of the renovated butter factories of the United States. Two firms took out licenses early in the year to make renovated butter in this State; later, one of these, the American Farm Products Company, gave up the manufacturing business here, they having several factories in other States, and established a distributing house instead; the other, the Eastern Butter Company, continues, the only local factory now in operation.

The output of the renovated butter factories of the United

States, according to the Secretary of Agriculture, for the year ending June 30, 1906, was 53,795,321 pounds, as compared with 60,164,783 pounds for 1905, — a decrease of 6,369,462 pounds.

BUTTER.

The production of a strictly high-class butter, simple as it seems, is an extremely difficult problem, requiring knowledge, care, skill and perseverance. One man thinks he makes as good butter as another; but when two or more makes are compared, the difference becomes manifest. In examining butters of various exhibits at dairy conventions, fairs, etc., the writer has been struck with the fact that even where all are good, perhaps scoring above 90 per cent, not more than one in ten will go over 95 per cent. There can be little doubt that there is much yet to be learned, or, if not learned, to be put in practice, by the dairymen and butter makers. More attention must be given to the care of cream; possibly a local inspection of the dairies, such as is made where milk is produced for market, will become necessary, — not, however, if every patron learns how to care for his milk and cream, and then puts his knowledge in practice. This is not offered in a spirit of criticism, but is rather a hint as to what is necessary to make gilt-edged butter.

The butter market for the year has been in some respects unique. It will be noted, by reference to the appended tables, that an unusually large stock was carried over in Boston from last year, and that this was followed by an increase the first five months, after which there was a falling off in the supply from the corresponding months of the previous year. This, occurring in the face of an increased demand, caused an advance in price during the summer, which has continually increased up to the close of the year, at which time butter is selling at a higher price than any corresponding period for many years. The average is practically the same, however, as in 1905, when the price was at its maximum height in the early part of the year.

The following table shows the average quotation for the best fresh creamery butter in a strictly wholesale way in the Boston market for the last eight years: —

	1906. Cents.	1905. Cents.	1904. Cents.	1903. Cents.	1902. Cents.	1901. Cents.	1900. Cents.	1899. Cents.
January, . . .	25.2	28.0	22.7	28.0	25.0	25.0	29.5	21.0
February, . . .	25.2	31.6	24.6	27.0	28.5	25.0	26.0	24.0
March, . . .	25.5	28.0	24.1	27.0	29.0	23.0	27.0	22.5
April, . . .	22.2	29.1	21.6	27.5	32.0	22.0	21.0	21.0
May, . . .	19.9	23.9	19.9	22.5	25.0	19.5	20.5	19.0
June, . . .	20.2	20.7	18.4	22.75	23.5	20.0	20.5	19.0
July, . . .	21.0	20.6	18.3	20.5	22.5	20.0	20.5	19.0
August, . . .	23.8	21.6	19.1	20.0	21.5	21.0	22.0	21.5
September, . .	25.6	21.2	20.8	22.0	23.5	22.0	22.5	23.5
October, . . .	26.9	22.1	21.5	22.5	24.5	21.5	22.0	24.0
November, . . .	27.6	23.0	24.1	23.5	27.0	24.0	25.0	26.5
December, . . .	30.7	23.9	25.7	24.5	28.5	24.5	25.5	28.0
Averages, . . .	24.48	24.47	21.73	26.23	25.0	22.3	23.5	22.4

The Chamber of Commerce figures regarding the butter business in Boston for 1905 and 1906 are as follows : —

	1906. Pounds.	1905. Pounds.
Carried over,	10,189,575	5,612,592
Receipts for January,	3,530,291	2,097,952
Receipts for February,	2,848,633	2,015,265
Receipts for March,	3,367,031	2,698,064
Receipts for April,	2,427,304	2,393,951
Receipts for May,	5,856,768	5,260,758
Receipts for June,	8,603,945	10,696,890
Receipts for July,	9,238,974	10,068,394

	1906. Pounds.	1905. Pounds.
Receipts for August,	8,778,101	10,376,813
Receipts for September,	6,688,729	7,743,859
Receipts for October,	6,983,522	6,549,119
Receipts for November,	3,990,993	3,135,224
Receipts for December,	2,838,032	3,688,555
Total supply,	75,341,898	72,337,436
Exports for twelve months, deduct,	5,146,297	2,551,319
Net supply,	70,195,601	69,786,017
Stocks in storage December 29, deduct,	6,851,825	10,189,575
Consumption for twelve months,	63,343,776	59,596,542
Increase in consumption for 1906,	3,747,234	

MILK.

The price of market milk has been raised in various cities in the Commonwealth during the year 1 cent per quart to the consumer, but it has rarely been the case that there has been a net gain of 1 cent per quart to the producer. The price of milk in Boston was nominally raised 1 cent per quart to the consumer October 1. The price paid the farmer was raised 1½ cents per eight-quart can. As these cans actually hold eight and one-half quarts, the net raise to the farmer per quart was .1764, or between $\frac{1}{6}$ and $\frac{1}{5}$ of a cent per quart, — nearer $\frac{1}{6}$ than $\frac{1}{5}$, — hardly enough, it would seem, to meet the additional expense of present cost of and care in producing clean market milk. Allusion has been made elsewhere to the improvement in matters of handling on the part of the milk contractors in recent years. This has not come about all at once, but nevertheless it has reached a point where the cost of running business has very materially increased. Just what this cost is no one knows but themselves. There is no doubt, however, upon one point, and that is, if

the milk producers of this Commonwealth are to be put on a safe financial basis, more than $31\frac{1}{2}$ cents per quart must be the net price paid to the farmer at his door. The actual necessary cost of producing a quart of milk, even under crude conditions, is not far from 3 cents at the present time.

According to the report of the United States Department of Agriculture last year, after investigating the milk supply of the city of Boston, Mr. Whitaker estimated that from 80 to 85 per cent of the milk consumed in greater Boston is brought in by the railroads. In the twelve months from Dec. 1, 1905, to Dec. 1, 1906, these railroads reported to the Railroad Commissioners 114,233,976 quarts of milk brought into Boston, which is understood to be exclusive of the cream which is shipped in by freight. If we call the milk brought into greater Boston by the railroads four-fifths of that consumed, we have 142,762,470 quarts as the total amount brought in; and a raise of 1 cent per quart, whenever such raise actually takes place, means an increase of \$1,427,624.70, which looks like a very large sum.

Professor Alvord found that the average consumption of milk in the country was practically two-thirds of a pint per day per capita. On this basis, a raise of 1 cent per quart would mean not far from \$1.20 per person per year, or \$6 for an average family of five persons, from which standpoint it does not look large, and can hardly be said to be a burden. The consumer, the contractor and the farmer will have to adjust this matter some day, when the latter may get a fair price for clean, pure milk.

That market milk has improved in the matter of temperature and cleanliness is shown by the last report of the board of health of the city of Boston, from which we learn that the milk samples taken from contractors in 1904 showed 35.6 per cent over 50° F., and in 1905 only 6.33 per cent, — a reduction of nearly 600 per cent. In 1904, 18.87 per cent showed over 500,000 bacteria per cubic centimeter; and in 1905, only 12.25 per cent, — a reduction of practically $33\frac{1}{3}$ per cent; and we may reasonably expect the present year will show further improvement.

Appended are the figures concerning carred milk, as reported by the various railroads to the Railroad Commissioners.

Milk brought into Boston by the Different Railroads, December, 1904, to December, 1905, as reported to the Railroad Commissioners.

DATE.	Boston & Albany (Quarts).	Boston & Maine (Quarts).	New York, New Haven & Hartford (Quarts).	Total Quarts.
1904.				
December, . . .	1,042,236	5,766,858	1,680,430	8,489,524
1905.				
January, . . .	1,042,236	5,812,340	1,785,684	8,640,260
February, . . .	982,702	5,367,590	1,658,750	8,009,042
March, . . .	1,225,445	6,248,083	1,859,833	9,333,361
April, . . .	1,539,268	5,897,420	1,891,945	9,328,633
May, . . .	1,693,217	6,740,252	1,942,144	10,375,613
June, . . .	1,689,188	7,030,686	1,832,331	10,552,205
July, . . .	1,618,783	6,810,708	1,795,917	10,225,408
August, . . .	1,483,684	6,370,690	1,780,497	9,634,853
September, . .	1,426,876	5,838,342	1,680,085	9,945,303
October, . . .	1,457,418	6,296,463	1,849,950	9,603,431
November, . .	1,239,461	5,662,587	1,727,047	8,629,095
Totals, . . .	16,440,514	73,842,019	21,484,595	111,767,128

Milk brought into Boston by the Different Railroads, December, 1905, to December, 1906, as reported to the Railroad Commissioners.

DATE.	Boston & Albany (Quarts).	Boston & Maine (Quarts).	New York, New Haven & Hartford (Quarts).	Total Quarts.
1905.				
December, .	1,283,500	6,198,697½	1,779,626	9,261,823½
1906.				
January, .	1,332,604	6,147,201½	1,857,863	9,337,668½
February, .	1,205,300	5,320,639	1,699,607	8,225,546
March, .	1,536,120	6,134,064	1,837,624	9,507,808
April, .	1,587,060	6,051,116	1,902,188	9,540,364
May, .	1,769,768	6,596,392	1,876,023	10,242,183
June, .	1,759,177	6,964,326	1,913,221	10,636,724
July, .	1,695,886	6,640,927	1,724,948	10,061,761
August, .	1,630,869	6,372,150	1,610,180	9,613,199
September, .	1,541,245	6,369,436	1,623,933	9,534,614
October, .	1,524,968	6,266,043	1,686,887	9,477,898
November, .	1,383,409	5,812,806	1,598,172	8,794,387
Totals, .	18,249,906	74,873,798	21,110,272	114,233,976

The following table shows the wholesale price of milk sent to the Boston market for the last ten years : —

Summer Price.

	Gross Boston Price (Cents).	"Straight Price," Boston (Cents).	Gross to Producer, Fifth Zone (Cents).	Straight Price to Producer, Fifth Zone ¹ (Cents).
1897, April to October, .	31	-	22	-
1898, " " .	31	-	22	-
1899, " " .	31	-	22	-
1900, " " .	33	-	24	-
1901, " " .	33	31	24	22
1902, " " {	36 in April, 34 in April, 35 in May, June. 33 in May, June.	34 in April, 34 in April, 33 in May, June.	27 26	25 24
1903, " " .	37½	35½	28½	26½
1904, " " .	37½	35½	28½	26½
1905, ² " " .	37½	35½	28½	26½
1906, " " .	37½	35½	28½	26½

Winter Price.

1897-8, October to April,	33	-	24	-
1898-9, " " .	33	-	24	-
1899-0, " " .	33	-	24	-
1900-1, " " {	37 to January. 35 to April.	-	28 to January. 26 to April.	-
1901-2, " " {	36 40 in December.	34½ 38½ in December.	27 31	25.5 29.5
1902-3, " " .	39½	37½	30½	29
1903-4, " " .	39½	37½	30½	28½
1904-5, " " .	39½	37½	30½	28½
1905-6, ³ " " .	39½	37½	30½	28½
1906-7, " " .	41	39	32	30

¹ The price in the fifth zone, i.e., the middle territory, is approximately the average price which the producers receive for their milk delivered at the railroad station.

² The so-called Knapp tables, allowing a variation of 16½ per cent either way from the given basis of uniform production, were made a part of this year's contract. Should the producer exceed this limit, up to a certain point the penalty is that he is obliged to take 1 cent less per can for his entire month's production; if he exceeds that point or second limit, another cent less and so on.

³ It was agreed that in case the cans were washed and returned clean, ½ cent per can should be deducted.

CREAMERIES AND MILK DEPOTS.

Appended we give a revised list of the principal creameries and milk depots owned and operated by Massachusetts individuals and corporations. There are in this State, in addition to these, a number of distributing plants for creameries owned and operated in other States. For instance, the Maine Creamery Company of Bangor, Me., has offices at 12 Foster Wharf, Boston. The Turner Centre Creamery of Auburn, Me., has distributing houses in Boston, Worcester, Taunton and Lowell, and ships to these points butter, cream, and to one at least skimmed milk.¹ The New England Creamery of Livermore Falls, Me., distributes through a Massachusetts company of the same name in Everett, which also distributes the "Hampden Creamery" goods. The Lyndonville Creamery of Lyndonville, Vt., has a plant at Watertown, from which it distributes milk, cream and butter. J. L. Humphrey, Jr., has four plants, one each in New Bedford, Fall River, Taunton and Brockton, for the distribution of butter and renovated butter (and sometimes cream) from his Iowa creameries. The Armours, Swifts, Hammonds, Morrisises and other large packing houses, all representing western-made goods, distribute quantities of butter and renovated butter from their numerous establishments scattered over the State. Some of these also put out oleomargarine. Besides these, there is a considerable number of creamery companies and so-called creameries which buy their stock of producers in this and other States. These in the aggregate do a large business. Other private dairies or creameries also have town offices, restaurants, etc. The above is difficult of strict classification.

¹ Pasteurized skimmed milk and cream are put together in the proper proportions required for standard milk, in the Boston plant, and the milk thus made is placed upon the market.

Creameries and Milk Depots in Massachusetts.

LOCATION.	Name.	Co-operative or Proprietary.	Superintendent or Manager.
Amherst,	Amherst Creamery,	Co-operative,	F. J. Humphrey, agent.
Amherst,	Fort River,	Proprietary,	E. A. King.
Amherst,	Dairy Farming Course, Massachusetts Agricultural College.	Educational,	Prof. W. P. Brooks, director.
Ashfield,	Ashfield Creamery,	Co-operative,	Geo. G. Henry.
Belchertown,	Belchertown Creamery,	Co-operative,	M. G. Ward, president.
Boston, 494 Rutherford Avenue,	H. P. Hood & Sons, ¹	Proprietary,	H. P. Hood & Sons.
Boston, 793 Boylston Street,	Walker-Gordon Laboratory Co.,	Proprietary,	Walker-Gordon Laboratory Co.
Boston, office 1171 Tremont Street,	Alden Bros., ²	Proprietary,	Charles L. Alden.
Boston, Wales Place,	Elm Farm Milk Company,	Proprietary,	James H. Knapp, manager.
Boston, 556 Rutherford Avenue,	D. Whiting & Sons,	Proprietary,	D. Whiting & Sons.
Boston, 388 Rutherford Avenue,	Boston Dairy Company,	Proprietary,	Boston Dairy Company.

¹ H. P. Hood & Sons also have milk depots at Dorchester, Lynn and Salem.² Creamery at 28 Duncan Street.

Creameries and Milk Depots in Massachusetts — Continued.

LOCATION.	Name.	Co-operative or Proprietary.	Superintendent or Manager.
Boylston,	Adelphia Creamery,	Proprietary,	E. M. Laws.
Bridgewater,	Plymouth County Creamery, ¹	Proprietary,	S. Neilson Houlburg.
Cambridge, 158 Massachusetts Avenue.	C. Brigham Company,	Proprietary,	C. Brigham Company.
Cheshire (P. O., Adams),	Greylock Creamery,	Co-operative,	C. J. Fales, president.
Cheshire,	Highland Creamery,	Proprietary,	Clayton W. Prince.
Cheshire,	West Shore Creamery,	Proprietary,	Seth W. Curtis.
Conway,	Conway Creamery,	Proprietary,	Boston Dairy Company.
Cummington,	Cummington Creamery,	Co-operative,	S. W. Clark, president.
Easthampton,	Hampton,	Co-operative,	W. H. Wright, treasurer.
Egremont (P. O., North Egremont),	Egremont Creamery,	Co-operative,	H. O. Harrington.
Everett,	Hampden Creamery Company,	Proprietary,	Hampden Creamery Company.

Framingham (P. O., South Framingham).	Echo Farm Company,	Proprietary,	W. E. Marchent.
Fitchburg, 26 Cushing Street,	Fitchburg Creamery,	Proprietary,	G. S. Learned.
Gardner,	Boston Dairy Company,	Proprietary,	Boston Dairy Company.
Groton,	Lawrence Creamery,	Proprietary,	Myron P. Swallow.
Heath,	Cold Spring Creamery,	Proprietary,	I. W. Stetson & Son.
Hinsdale,	Hinsdale Creamery,	Proprietary,	Clark & Solomon.
Lee,	Lenox Creamery,	Co-operative,	P. A. Agnew, manager.
Leominster,	Leominster Creamery,	Proprietary,	C. F. Paige Company.
Marlborough,	Este's Creamery,	Proprietary,	F. F. Este.
Monson,	Monson Creamery,	Proprietary,	W. C. Moulton.
Montague,	Montague Creamery,	- ²	W. A. Pease, manager.
Monterey,	Berkshire Hill Creamery,	Co-operative,	M. V. Thompson, president.
New Boston,	Berkshire Creamery,	Co-operative,	N. H. Snow, president.

¹ Cream only.² Leased and operated by Tait Bros., Springfield.

Creameries and Milk Depots in Massachusetts—Concluded.

LOCATION.	NAME.	Co-operative or Proprietary.	Superintendent or Manager.
New Salem (P. O., Millington), . . .	New Salem Co-operative Creamery Company.	Co-operative,	W. A. Moore.
North Brookfield, . . .	North Brookfield Creamery, . . .	Proprietary,	H. A. Richardson.
Northfield, . . .	Northfield Creamery, . . .	Co-operative,	L. R. Smith.
Orange (P. O., North Orange), . . .	North Orange Creamery, . . .	Co-operative,	C. E. Dunbar.
Shelburne Falls, . . .	Totnan's Creamery, . . .	Proprietary,	T. M. Totman.
Southborough, . . .	Deerfoot Farm, . . .	Proprietary,	S. H. Howes, manager.
Springfield, . . .	Springfield Milk Association, . . .	Co-operative,	F. B. Allen.
Springfield, . . .	Tait Bros., . . .	Proprietary,	Tait Bros.
Uxbridge, . . .	Farnum Creamery, . . .	Proprietary,	Geo. A. Farnum.
Warren, . . .	Worcester County Creamery Association.	Co-operative,	F. N. Lawrence, treasurer.
Westfield (P. O., Wyben), . . .	Wyben Springs Creamery, . . .	Co-operative,	C. H. Wolcott.

West Newbury,	West Newbury Creamery,	Co-operative,	R. S. Brown, treasurer.
West Stockbridge,	Borden Condensed Milk Co.,	Proprietary,	C. E. Hardy, manager.
Williamsburg,	Williamsburg Creamery,	Co-operative,	E. T. Barrus, president.
Worthington (P. O., Ringville),	Worthington Creamery,	Co-operative,	M. R. Bates, superintendent.
Worcester,	Wachusett Creamery,	Proprietary,	E. H. Thayer & Co.

EXPENSES.

The following is a classified statement of the expenses for the eleven months ending Nov. 30, 1906 :—

Bureau: compensation and travelling expenses, . . .	\$445 74
Agents: compensation,	1,901 50
Agents: travelling expenses and samples purchased, . .	2,300 23
General agent: travelling and necessary expenses, . .	555 01
Chemists: analyses, tests, court attendance, . . .	763 50
Printing and supplies,	200 99
Educational,	249 66
<hr/>	
Total,	\$6,416 66

P. M. HARWOOD,

General Agent.

Accepted and adopted as the report of the Dairy Bureau.

C. D. RICHARDSON.
JOHN M. DANFORTH.
HENRY E. PAIGE.

SEVENTEENTH ANNUAL REPORT

OF THE

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 15, 1908.



BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,

18 POST OFFICE SQUARE.

1908.

SEVENTEENTH ANNUAL REPORT

OF THE

Mass:

= DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 15, 1908.



BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,

18 POST OFFICE SQUARE.

1908.

APPROVED BY
THE STATE BOARD OF PUBLICATION.

614.32M3

D132

1907

B

DAIRY BUREAU—1907.

CARLTON D. RICHARDSON, WEST BROOKFIELD, *Chairman.*

JOHN M. DANFORTH, LYNNFIELD CENTRE.

HENRY E. PAIGE, AMHERST.

Secretary.

J. LEWIS ELLSWORTH, *Executive Officer and Secretary of the
State Board of Agriculture.*

General Agent.

P. M. HARWOOD.

ADDRESS, ROOM 136, STATE HOUSE, BOSTON.

Commonwealth of Massachusetts.

REPORT.

Each year brings with it changed conditions and results in new and varying work. We have found less violations of the renovated butter law and an increase in violations of the oleomargarine laws. This is accounted for by the fact that fewer dealers are now handling the former, while the number handling the latter has increased. It is believed that the amount of oleomargarine sold in the State has somewhat increased, although the Boston receipts show a falling off of nearly 2,000 packages. As the oleomargarine now on the market is not prohibited by State law, as was the case with that formerly sold, the various laws governing registration of dealers, the marking of vehicles, the labelling of packages, placing of signs, and, above all, the selling of oleomargarine as and for butter, are the only means of protecting the public against fraud, and the butter makers and dealers against unfair competition. We have presented in court, during the year, 101 cases of violation of the various oleomargarine laws, 79 cases of violation of the renovated butter law and 18 cases for the adulteration of milk. Two of the cases were for milk containing formaldehyde; the balance were undoubtedly watered. Most of this milk work has been done in conjunction with the local milk inspectors.

We have during the year come into closer touch with these officers than ever before, and have gathered from them information which has aided us materially in our work, for which we record our indebtedness. We notice that in places where the campaign for pure milk has waged longest and much high-priced milk is sold the rate of consumption of milk per capita is high. This is encouraging, and shows

what can be accomplished by furnishing consumers with a good article. It is the assurance that milk is clean and right that counts in obtaining the confidence of the public, thus increasing consumption, especially after the consumer has become accustomed to paying the higher price. It is along these lines that those in authority are working, and we trust that the assurance of improved quality and condition of milk now being produced in this State will increase the consumption still further in the near future, and that the price to the farmers will soon be such as will fairly recompense them for its production.

The milk standard question was agitated before the Legislature last winter, and several bills were offered by interested parties, but none prevailed. We are of the opinion that the day will some time come when milk will be sold on its merits, and that fat content will be the measure of its commercial value. We also believe that some way should be provided to permit the legal sale of any and all milk produced by healthy, properly fed and well-cared-for cows. We do not believe that the present milk standard law is right, in so far as it calls for too wide a variation between summer and winter milk. It would perhaps be better not to have any variation at all. We are decidedly of the opinion that milk from other States should be subject to all the requirements as to its production which prevail in this State.

Elsewhere will be found a list of the prosecutions and some interesting analyses of market milk as it is being produced to-day, and also figures illustrative of adulterated and unadulterated milk.

We are glad to note an increase in the price of milk, indicative of better conditions for the dairyman. What is needed to-day perhaps more than ever before is confidence and co-operation between all parties concerned in the milk business. If all will pull together, more milk will be consumed, a better price paid and the producers properly remunerated. Care must be taken, however, that no legislation is allowed that will make the producer worse off than he is at present.

The personnel of the Bureau and its staff has remained unchanged. J. M. Danforth was reappointed by Governor Guild, C. D. Richardson has continued as chairman, H. E. Paige as a member, J. Lewis Ellsworth secretary, P. M. Harwood general agent, A. W. Lombard agent, B. F. Davenport and H. C. Emerson chemists, and four persons have been temporarily employed as agents during some part of the year.

The summary of the year's work is as follows:—

Total number of inspections,	15,779
Number of inspections where no sample was taken,	4,538
Number of samples of butter and oleomargarine, nearly all purchased,	1,182
Number of samples of milk and cream, mostly purchased,	192
Cases in court,	202
Meetings addressed by chairman of the Bureau,	17
Meetings addressed by the general agent,	27

Cases prosecuted during the eleven months ending Nov. 30, 1907, by months and courts, with law violated, and results, are as follows:—

Court.	Month.	Number.	Law violated.	Convicted.	Discharged.
Worcester, .	January, .	12	Oleomargarine, .	12	—
Pittsfield, .	January, .	4	Renovated butter, .	4	—
North Adams, .	January, .	11	9 oleomargarine, 2 renovated butter.	11	—
Boston, . .	January, .	5	Renovated butter, .	5	—
Lowell, . .	February, .	18	4 renovated butter, 14 oleomargarine.	18	—
Boston, . .	February, .	4	Renovated butter, .	4	—
Lawrence, .	February, .	4	Renovated butter, .	4	—
Chicopee, .	February, .	4	Oleomargarine, .	4	—
Taunton, .	March, .	8	2 renovated butter, 6 oleomargarine.	8	—
New Bedford, .	March, .	16	Renovated butter, .	15	1

¹ There were 133 extra samples taken during inspections, therefore this number is 133 less than the sum of the next three items.

Court.	Month.	Num- ber.	Law violated.	Con- victed.	Dis- charged.
Worcester, .	March, .	3	Milk,	3	—
Boston, . .	March, .	4	Renovated butter, .	4	—
Springfield, .	March, .	3	Renovated butter, .	3	—
Northampton, .	March, .	2	Renovated butter, .	2	—
Holyoke, . .	March, .	8	Renovated butter, .	8	—
Boston, . .	April, .	2	Oleomargarine, .	2	—
Lynn, . . .	April, .	9	4 oleomargarine, 5 renovated butter.	9	—
Beverly, . .	April, .	4	Oleomargarine, .	4	—
Holyoke, . .	April, .	19	Oleomargarine, .	17 ¹	—
Springfield, .	April, .	2	Oleomargarine, .	2	—
Worcester, .	April, .	2	Milk,	2	—
Worcester, . .	May, . .	4	Oleomargarine, .	4	—
Southbridge, .	May, . .	3	Oleomargarine, .	3	—
Worcester, .	June, . .	1	Milk,	1	—
Worcester, .	August, .	3	Milk,	3	—
Woburn, . .	August, .	1	Milk,	1	—
Worcester, .	September,	1	Milk,	1	—
Chicopee, . .	October, .	2	Milk,	2	—
Salem, . . .	October, .	6	Milk,	6	—
Wareham, . .	October, .	10	4 renovated butter, 6 oleomargarine.	10	—
Fall River, .	November,	12	Oleomargarine, .	12	—
New Bedford, .	November,	6	Oleomargarine, .	6	—
Quincy, . . .	November,	5	4 oleomargarine, 1 renovated butter.	5	—
Dedham, . .	November,	2	Renovated butter, .	2	—
Malden, . . .	November,	2	Renovated butter, .	2	—
Totals, . . .	. . . . .	202	. . . . .	199	1

¹ Two cases nol-prossed by agreement, defendant paying \$100 fine on another complaint.

NOTE. — The milk cases in Worcester were prosecuted in conjunction with G. L. Berg, in Chicopee with C. W. King, in Salem with J. J. McGrath, and in Woburn with P. T. McDonough; and the renovated butter work in Boston with James O. Jordan. The Bureau is also indebted to the milk inspectors of Worcester, Lowell, Lynn, Holyoke, Chicopee, Springfield, Northampton, Greenfield and Taunton for valuable assistance in oleomargarine and milk work.

The charges in the several cases in court for the year ending Nov. 30, 1907, have been as follows : —

Selling renovated butter in unmarked packages,	79
Selling oleomargarine in imitation of yellow butter,	4
Selling oleomargarine without sign on exposed contents,	7
Selling oleomargarine when butter was asked for,	22
Selling oleomargarine without being registered,	10
Selling oleomargarine without sign in store,	17
Selling oleomargarine in unmarked packages,	12
Selling oleomargarine from wagon without license,	3
Selling oleomargarine from wagon not bearing the words “licensed to sell oleomargarine,”.	7
Selling oleomargarine from restaurant without notice to guests,	23
Selling milk containing formaldehyde,	2
Selling milk containing added water,	14
Selling milk below standard, ¹	2
	202

The following is a list of inspections without samples and the number of samples taken in the years 1903–1907, inclusive : —

YEAR.	Inspections without Samples.	Samples taken.
1903,	4,135	1,395
1904,	4,456	1,157
1905,	4,887	971
1906,	4,985	576
1907,	4,538	1,374
Totals,	23,001	5,473
Averages,	4,600+	1,096+

¹ This milk was undoubtedly adulterated, but was entered as above for convenience.

The following is a list of the number of cases entered in court and also the number of convictions secured in the years 1903-1907, inclusive:—

YEAR.	Total Cases.	Convictions.
1903,	289	272
1904,	168	166
1905,	155	155
1906,	113	110
1907,	202	199
Totals,	927	902
Average convictions,	185+	180+

OLEOMARGARINE.

For the first time we are able to report that there are no licenses taken out in this State for the sale of colored oleomargarine, and no case has been discovered during the year where oleomargarine which contained foreign “coloration,” “which caused it to look like yellow butter,” has been sold. There are, however, upon the market several brands of oleomargarine which look like yellow butter, apparently made so by the ingredients which they contain. The wording of our statute seems to many to prohibit the sale of even such goods, but our Superior Court judges rule otherwise. The United States government officials also allow such goods to be made and sold upon the payment of the one-fourth cent tax, as uncolored oleomargarine. So strongly impressed were we that the wording of our statute prohibited the sale of these goods that we took a sample from a prominent wholesale dealer and attempted to make a test case of it for decision by the Supreme Court. The dealer and the manufacturers were agreeable to this, and an agreed statement of fact was drawn up by their counsel and the district attorney of Worcester County; but the presiding judge (Brown), sup-

ported by a previous decision by Judge Bishop, which had been endorsed by several other Superior Court judges, overruled the attempt, and the matter stands just where it did before. If this sort of oleomargarine is to be sold in this State, then it becomes necessary, in order to safeguard the consuming public as well as the dairy interests, that all laws regulating the sale of the same shall be rigidly enforced. This we have done, and 101 violations have been found and the cases have been entered in court during the past year.

The output of oleomargarine in the United States for the year ending June 30, 1907, was greater than at any time since the enactment of the last national oleomargarine law, but is still far below that of the years previous to its enactment. The appended statistics tell the story : —

Under New Law.

	Pounds.
1907,	68,988,850
1906,	53,146,657
1905,	49,880,982
1904,	48,071,480
1903,	71,804,102

Under Old Law.

1902,	126,316,472
1901,	104,943,856
1900,	107,045,028

The licenses issued in this State have also increased, being as follows : —

Retail, uncolored,	229
Wholesale, uncolored,	17
Total,	246

The Boston oleomargarine receipts were 14,581 packages for the year 1907, — a decrease of 19,131 packages from the previous year.

RENOVATED BUTTER.

It is an interesting fact that the sales of renovated butter have apparently fallen off in this State. We are at a loss to account for this, unless it be that the price of renovated butter, which only follows a few cents behind creamery

butter, has been carried at too high a point, those who were obliged to use lower-priced goods using a cheaper grade of butter or oleomargarine instead. There is but one factory license issued in this State. The number of cases in court this year for violation of the renovated butter law was 79. The output of the renovated butter factories of the United States for the year ending June 30, 1907, was 62,919,998 pounds.

BUTTER.

The price of butter has ruled higher than for many years, which was natural, and in conformity with the general advance of prices and the advanced cost of milk production. We believe that the quality of butter upon the market is slowly but surely improving. A more intelligent care of the dairy and more skill in the use of the starter by the butter maker are undoubtedly to a large extent responsible for this. High prices, however, are not conducive to the increase of volume of business, and the Boston supply has fallen considerably below that of 1906. This is apparently largely due to the decrease in export trade, for there is still a balance of 224,464 pounds, representing the increased local consumption, — a figure much below that of last year.

The winter meeting of the Massachusetts Creamery Association was the most enthusiastic and successful held for some years. The quality of the butter exhibited showed improvement. The association is harmonious, intelligent and progressive.

The average price paid per pound of butter fat by the local creameries to patrons, so far as reported, was 30.79+ cents.

The following table shows the average quotation for the best fresh creamery butter in a strictly wholesale way in the Boston market for the last eight years: —

	1907.	1906.	1905.	1904.	1903.	1902.	1901.	1900.
	Cents.	Cents.	Cents.	Cents.	Cents.	Cents.	Cents.	Cents.
January, .	30.4	25.2	28.0	22.7	28.0	25.0	25.0	29.5
February, .	31.7	25.2	31.6	24.6	27.0	28.5	25.0	26.0
March, .	30.2	25.5	28.0	24.1	27.0	29.0	23.0	27.0
April, .	32.2	22.2	29.1	21.6	27.5	32.0	22.0	21.0
May, .	31.4	19.9	23.9	19.9	22.5	25.0	19.5	20.5
June, .	24.3	20.2	20.7	18.4	22.75	23.5	20 0	20.5
July, .	25.9	21.0	20.6	18.3	20.5	22.5	20.0	20.5
August, .	26.0	23.8	21.6	19.1	20.0	21.5	21.0	22.0
September, .	29.2	25.6	21.2	20.8	22.0	23.5	22.0	22.5
October, .	29.9	26.9	22.1	21.5	22.5	24.5	21.5	22.0
November, .	27.1	27.6	23.0	24.1	23.5	27.0	24.0	25.0
December, .	27.5	30.7	23.9	25.7	24.5	28.5	24.5	25.5
Averages, .	28.48	24.48	24.47	21.73	26.23	25.0	22.3	23.5

The Chamber of Commerce figures regarding the butter business in Boston for 1906 and 1907 are as follows : —

	1907.	1906.
	Pounds.	Pounds.
Carried over,	6,851,825	10,189,575
Receipts for January,	2,652,155	3,530,291
Receipts for February,	2,669,598	2,848,633
Receipts for March,	2,731,791	3,367,031
Receipts for April,	3,504,867	2,427,304
Receipts for May,	5,339,155	5,856,768
Receipts for June,	8,559,668	8,603,945
Receipts for July,	10,711,647	9,238,974
Receipts for August,	8,703,341	8,778,101
Receipts for September,	6,778,041	6,688,729
Receipts for October,	5,982,162	6,983,522
Receipts for November,	3,302,617	3,990,993
Receipts for December,	2,654,185	2,838,032
Total supply,	70,441,052	75,341,898
Exports for twelve months, deduct,	18,052	5,146,297
Net supply,	70,423,000	70,195,601
Stocks in storage December 29, deduct,	6,854,760	6,851,825
Consumption for twelve months,	63,568,240	63,343,776
Increase in consumption for 1907,	224,464	

MILK.

The summer price of milk for the Boston market was raised to 28½ cents per can (where the cans were returned clean by the contractors) in the 9-cent or so-called average zone. This was an increase of 2½ cents per can over the price paid in 1906, when it was 26 cents, making the 1907 summer price per quart to producers at railroad station 3.35+ cents. The winter price was raised to 35½ cents per can (clean cans), which was 6 cents more than was paid in the winter of 1906–07, and 7 cents increase over the summer price of 28½ cents, making the 1907–08 winter price per quart to the producer at railroad station 4.17+ cents. One-half cent more per can is paid where farmers wash their own cans.

The difference between the net Boston price of milk and the price paid the producer at the railroad station depends upon the distance from Boston, and the discounts from the Boston price are as follows:—

	Cents.
For stations between 17 and 23 miles,	6
For stations between 23 and 36 miles,	7
For stations between 36 and 56 miles,	8
For stations between 56 and 76 miles,	9

This last is called the middle or average zone, although it is undoubtedly inside the average. The zones beyond 76 miles are 20 miles wide, and 1 cent per can additional is deducted in each of these zones as the distance increases. The payment for milk on part of a majority of the larger contractors is governed by the so-called Knapp tables. The object of this system is to secure even production, and still allow a producer to increase or decrease his business by asking at the beginning of the six months for the rating he desires. We have thought best to publish a sample sheet of these tables, that the public may have a better knowledge of the system.¹ One of the contractors pays on a different basis, paying 2 cents per can less for unrestricted production. Another one of the smaller contractors buys milk paying a

¹ See pages 16, 17.

standard price for that between 3.6 and 4 per cent butter fat ; for milk testing above 4 per cent and not above 4.2 per cent, 1 cent extra per can is paid ; for milk testing above 4.2 per cent and not above 4.4 per cent, 2 cents, and above 4.4 per cent, 3 cents. If milk falls below 3.6, the price is decreased relatively ; and if below 3 per cent, is not accepted. Another of the smaller firms buys a part of its supply on the butter-fat basis, paying a premium for all over 4 per cent fat.

The milk in southwestern Massachusetts is shipped to the New York market. The system of payment on part of the Willow Brook Dairy at Sheffield, for example, is the New York exchange price ; at present writing, December, 4 cents per quart, subject to change at any time, but is based upon 4.2 per cent butter fat, $2\frac{1}{2}$ cents being added to or subtracted from the price of a 40-quart can for each one-tenth above or below. In West Stockbridge the F. D. Shove Milk Factory pays by the hundred weight. This winter's price is as follows : October, \$1.80 ; November, December, January and February, \$2 ; and March, \$1.80 per hundred weight.

The retail price in many of the cities and towns in the Commonwealth has been increased approximately 1 cent per quart over that of the winter of 1906. In some cases the consumption fell off temporarily, but it is believed that it is now rising towards normal. The producers supplying milk to such cities and towns have in the main received an advance in price, the price to the producer as a rule having been advanced about $\frac{1}{2}$ cent per quart over that of last winter. This has given the producers near Boston about 5 cents at the farm on the average, those more remote $4\frac{1}{2}$ cents, while in the western part of the State about 4 cents per quart is the prevailing winter price.

Forty-four samples of milk were taken at Barre Plains in November from the firm of C. Brigham Company, just as it was received from the farmers. For results of analyses and refractometer tests, see page 18.

One interesting case of adulterated milk was procured in another locality. A sample was taken from a peddler, and found to be wrong. Upon being notified of the result this

peddler came at once to the office and declared that the milk was as he bought it, and asked as a favor that the dairies from which he was obtaining his supply be sampled. We did so, and on November 27 took a sample of the milk from one dairy, which analyzed 3.2 per cent fat; other solids, 8.24; total, 11.44; refractometer test, 39°. This farm had been delivering to the peddler for a month or more exactly 16 cans per day. On November 29 we saw this herd milked, took samples of known purity from the milk of each cow, and also of the mixed milk of the herd, with the result that the latter analyzed 4 per cent fat; other solids, 9.48; total solids, 13.48; refractometer test, 42.50.° The daily amount furnished the peddler from this dairy promptly fell off. The owner was tried later in the district court, found guilty and fined \$50, from which he appealed. For full results of analyses in this case see pages 18, 19.

For amount of milk received in Boston by railroad see page 19.

Knapp Table, with Ratings, showing the Discounts for Overproduction and Underproduction in the 9-Cent Zone.

TABLE FOR UNDERPRODUCTION.				1907 and 1908.	Minimum and Maximum for the Month.	TABLE FOR OVERPRODUCTION.			
32 cts.	33 cts.	34 cts.	35 cts.	Oct.	35 cts.	34 cts.	33 cts.	32 cts.	
34 cts.	35 cts.	36 cts.	37 cts.	Dec.	37 cts.	36 cts.	35 cts.	34 cts.	
33 cts.	34 cts.	35 cts.	36 cts.	Jan.	36 cts.	35 cts.	34 cts.	33 cts.	
31 cts.	32 cts.	33 cts.	34 cts.	Mar.	34 cts.	33 cts.	32 cts.	31 cts.	
				RATING.					
42-50	51-59	60-66	67-77	2½	78-89	90-96	97-105	106-114	
50-60	61-70	71-79	80-92	3	93-106	107-115	116-125	126-136	
58-71	72-83	84-92	93-108	3½	109-125	126-134	135-146	147-160	
66-81	82-94	95-105	106-123	4	124-142	143-153	154-166	167-182	
75-91	92-106	107-119	120-139	4½	140-160	161-173	174-188	189-205	
83-101	102-118	119-131	132-154	5	155-178	179-191	192-208	209-227	
99-122	123-141	142-158	159-185	6	186-213	214-230	231-249	250-273	
116-142	143-165	166-184	185-216	7	217-249	250-268	269-291	292-318	
133-163	164-189	190-211	212-247	8	248-284	285-306	307-332	333-363	
149-183	184-212	213-237	238-278	9	279-320	321-345	346-374	375-409	
166-203	204-236	237-264	265-309	10	310-355	356-383	384-416	417-454	
182-224	225-260	261-290	291-340	11	341-391	392-421	422-457	458-500	
199-244	245-283	284-317	318-371	12	372-426	427-460	461-499	500-545	
216-265	266-307	308-343	344-402	13	403-462	463-498	499-540	541-590	
232-285	286-331	332-370	371-433	14	434-497	498-536	537-582	583-636	
249-306	307-355	356-396	397-464	15	465-533	534-574	575-623	624-681	
265-325	326-378	379-423	424-495	16	496-568	569-613	614-666	667-727	
282-346	347-402	403-449	450-526	17	527-604	605-651	652-707	708-772	
298-366	367-426	427-476	477-557	18	558-639	640-689	690-749	750-818	
315-387	388-448	449-502	503-588	19	589-675	676-729	730-790	791-863	
332-408	409-473	474-529	530-619	20	620-710	711-766	767-831	832-908	

Knapp Table, with Ratings, etc. — Concluded.

TABLE FOR UNDERPRODUCTION.				1907.	Minimum and Maximum for the Month.	TABLE FOR OVERPRODUCTION.		
34 cts.	35 cts.	36 cts.	37 cts.	Nov.	37 cts.	36 cts.	35 cts.	34 cts.
40-48	49-56	57-64	65-74	RATING. 2½	75-85	86-93	94-101	102-110
49-59	60-68	69-76	77-89	3	90-103	104-111	112-120	121-131
57-68	69-79	80-89	90-104	3½	105-120	121-130	131-141	142-153
64-78	79-91	92-102	103-119	4	120-137	138-148	149-161	162-176
72-88	89-103	104-115	116-134	4½	135-154	155-166	167-181	182-198
81-98	99-114	115-127	128-149	5	150-172	173-185	186-201	202-219
96-118	119-137	138-153	154-179	6	180-206	207-222	223-241	242-264
112-138	139-160	161-178	179-209	7	210-241	242-259	260-281	282-308
128-157	158-183	184-204	205-239	8	240-275	276-296	297-322	323-352
144-177	178-205	206-230	231-269	9	270-309	310-334	335-362	363-396
160-197	198-228	229-255	256-299	10	300-344	345-371	372-402	403-440
177-217	218-251	252-281	282-329	11	330-378	379-408	409-442	443-483
193-236	237-274	275-307	308-359	12	360-412	413-445	446-483	484-527
209-256	257-297	298-332	333-389	13	390-447	448-482	483-523	524-571
225-276	277-320	321-358	359-419	14	420-481	482-519	520-563	564-615
241-296	297-343	344-384	385-449	15	450-515	516-556	557-603	604-659
257-316	317-366	367-409	410-479	16	480-550	551-593	594-643	644-703
273-335	336-389	390-435	436-509	17	510-584	585-630	631-684	685-747
289-355	356-412	413-460	461-539	18	540-619	620-667	668-724	725-791
305-375	376-435	436-486	487-569	19	570-653	654-704	705-764	765-835
321-395	396-458	459-512	513-599	20	600-687	688-741	742-804	805-879

TABLE FOR UNDERPRODUCTION.				1908.	Minimum and Maximum for the Month.	TABLE FOR OVERPRODUCTION.		
31 cts.	32 cts.	33 cts.	34 cts.	Feb.	34 cts.	33 cts.	32 cts.	31 cts.
39-47	48-55	56-62	63-72	RATING. 2½	73-84	85-90	91-98	99-107
46-56	57-66	67-73	74-86	3	87-100	101-107	108-117	118-128
54-66	67-77	78-86	87-101	3½	102-117	118-126	127-237	138-150
61-76	77-88	89-98	99-115	4	116-133	134-143	144-155	156-171
69-85	86-99	100-111	112-130	4½	131-150	151-162	163-176	177-193
77-95	96-110	111-123	124-144	5	145-166	167-179	180-194	195-213
92-114	115-132	133-148	149-173	6	174-199	200-215	216-233	234-256
105-133	134-154	155-172	173-202	7	203-233	234-251	252-272	273-298
123-152	153-175	176-197	198-231	8	232-266	267-298	289-311	312-341
138-171	172-199	200-222	223-260	9	261-299	300-322	323-350	351-384
154-192	193-221	222-247	248-289	10	290-332	333-358	359-387	388-426
169-210	211-243	244-272	273-318	11	319-365	366-394	395-427	428-469
184-229	230-265	266-296	297-347	12	348-399	400-430	431-476	467-512
200-248	249-287	288-321	322-376	13	377-432	433-466	467-505	506-554
215-267	268-309	310-346	347-405	14	406-465	466-502	503-544	545-597
231-286	287-332	333-371	372-434	15	435-498	499-537	538-583	584-639
246-305	306-354	355-395	396-463	16	464-532	533-573	574-622	623-682
261-324	325-377	378-420	421-492	17	493-565	566-608	609-661	662-725
277-344	345-398	399-445	446-521	18	522-598	599-645	646-699	700-767
292-363	364-420	421-470	471-550	19	551-631	632-681	682-738	739-810
307-382	383-443	444-495	496-579	20	580-664	665-716	717-777	778-853

If a dairy outruns the limits of overproduction or underproduction printed in the Table, payment will be made at a price proportional to the production.

Please cancel all previous schedules.

*Samples of Milk for Boston Market, as delivered at Car by Farmers,
taken from C. Brigham Company, at Barre Plains, Mass.*

Sample Number.	Number of Cans.	Number of Cows.	Solids not Fat.	Fat.	Total Solids.	Ash.	Refractometer Reading (Degrees).
1	5	9	8.90	4.80	13.70	.60	41.3
2	6	10	9.20	4.50	13.70	.60	41.3
3	12	18	8.90	3.90	12.80	.56	40.8
4	20	18	8.72	4.10	12.82	.54	40.5
5	10 $\frac{1}{2}$	10	8.84	3.30	12.14	.62	40.6
6	16	23	9.02	4.20	13.28	.62	41.3
7	2	2	8.92	4.60	13.52	.60	40.3
8	5	9	9.10	4.20	13.30	.54	41.3
9	9	11	8.78	4.00	12.78	.62	40.4
10	6	8	8.58	4.00	12.58	.68	40.8
11	7	-	9.24	3.80	13.04	.64	41.3
12	13	14	8.62	3.90	12.52	.62	40.5
13	3	7	8.84	5.10	13.94	.66	41.0
14	11	12	8.90	3.60	12.50	.66	41.0
15	9	12	8.84	4.10	12.94	.60	42.1
16	10	14	8.54	4.00	12.54	.60	40.9
17	3	-	9.10	4.40	13.50	.66	42.1
18	13	16	8.66	3.90	12.56	.62	40.2
19	7	7	8.58	4.00	12.58	.60	42.1
20	16	17	8.56	3.80	12.36	.60	41.9
21	16	16	8.02	4.70	12.72	.64	42.2
22	8	12	9.32	4.20	13.52	.68	42.9
23	5	-	9.14	4.30	13.44	.68	41.9
24	13	25	8.88	4.20	13.08	.60	41.1
25	5	-	9.36	4.60	13.96	.64	42.1
26 ¹	5	5	8.66	3.90	12.56	.60	42.2
27 ¹	2	3	9.80 ¹	3.20 ¹	13.00	.62 ¹	41.2 ¹
28	6	-	9.16	3.80	12.96	.66	41.6
29	5	-	9.04	4.20	13.24	.64	41.8
30	6	-	9.08	3.90	12.98	.62	41.6
31	3	-	9.28	4.50	13.78	.62	42.3
32	3	5	9.16	4.80	13.96	.66	41.8
33	6	6	8.84	4.40	13.24	.60	41.1
34	12	-	8.92	4.40	13.32	.60	41.3
35 ¹	4	10	7.28 ¹	3.70 ¹	10.98	.48 ¹	36.1 ¹
36	7	10	8.82	4.40	13.22	.60	41.9
37	9	11	8.90	4.20	13.10	.60	42.0
38	7	15	8.58	4.20	12.78	.62	41.3
39	8	9	8.90	4.10	13.00	.60	42.2
40 ²	-	-	-	-	-	-	-
41	5	8	8.56	3.60	12.16	.62	41.2
42	6	11	9.12	4.70	13.82	.64	42.7
43	12	-	8.94	4.40	13.34	.64	42.2
44	8	10	8.90	4.90	13.80	.64	41.9
Average of normal samples, .			8.89	4.21	13.10	.62	41.50

*Samples taken from the Mixture of Night's Milk as brought from a
Farm and delivered to a Peddler.*

DATE.	Fat.	Other Solids.	Total.	Water.	Ash.	Refractometer Reading (Degrees).
Nov. 25, 1907,	3.3	7.80	11.10	88.50	.60	39.00
Nov. 27, 1907, ³	3.2	8.24	11.44	88.56	.60	39.00
Nov. 29, 1907, ⁴	4.0	9.48	13.48	86.52	.72	42.50

¹ Abnormal milk.
Sample lost.

³ Witnessed.

⁴ Milk of known purity.

*Milk of Known Purity from Individual Cows of Same Herd as Above,
Nov. 29, 1907.*

Cow.	Quarts.	Fat.	Other olids.	Total.	Water.	Ash.	Refractometer Reading (Degrees).
No. 1, Holstein and Jersey,	4	4.6	10.10	14.70	85.30	.68	45.00
No. 2, Grade Jersey, . .	5	5.7	9.62	15.32	84.68	.80	43.50
No. 3, Grade Devon, . .	3	5.0	10.00	15.00	85.00	.84	43.00
No. 4, Grade Ayrshire, .	6	4.0	10.06	14.06	85.94	.74	44.20
No. 5, Grade Holstein, .	7	3.4	8.94	12.34	87.66	.64	42.00
No. 6, Jersey and Durham,	7	4.4	9.04	13.44	86.56	.70	42.00
No. 7, Grade Holstein, .	6	3.3	8.80	12.10	87.90	.60	41.50
No. 8, Grade Jersey, . .	6	4.6	9.74	14.34	85.66	.78	42.00
No. 9, Grade Holstein, .	6	3.7	8.50	12.20	87.80	.64	41.00
No. 10, Jersey and Devon, .	5	4.7	10.26	14.96	85.04	.66	42.30
No. 11, Grade Holstein, .	9	3.3	9.38	12.68	87.32	.70	42.00
*Average,	-	4.24+	9.49+	13.74	85.35+	.70+	42.59+

The following are the figures concerning carred milk, as reported by the various railroads to the Railroad Commissioners.

*Milk brought into Boston by the Different Railroads, December, 1906,
to December, 1907, as reported to the Railroad Commissioners.*

DATE.	Boston & Albany (Quarts).	Boston & Maine (Quarts).	New York, New Haven & Hartford (Quarts).	Total Quarts.
1906.				
December, . .	1,382,567	6,054,571	1,638,630	9,075,768
1907.				
January, . .	1,386,749	6,211,815	1,586,577	9,185,141
February, . .	1,239,827	5,523,853	1,516,558	8,280,238
March, . .	1,445,484	6,248,497	1,705,893	9,399,874
April, . .	1,472,430	6,185,519	1,828,261	9,486,210
May, . .	1,638,766	6,425,503	2,008,164	10,072,433
June, . .	1,691,241	6,487,446	2,080,381	10,259,068
July, . .	1,648,596	6,669,955	1,933,398	10,251,949
August, . .	1,452,650	5,970,386	1,807,663	9,230,699
September, . .	1,170,560	5,574,826	1,708,373	8,453,759
October, . .	1,333,905	5,037,707	1,821,845	8,193,457
November, . .	1,117,282	5,087,587	1,788,725	7,993,594 ¹
Totals, . .	16,980,057	71,477,665 ¹	21,424,468	109,882,190 ¹

¹ The total for the corresponding twelve months, 1906-07, was 114,233,976 quarts.

CREAMERIES AND MILK DEPOTS.

Appended we give a revised list of the principal creameries and milk depots owned and operated by Massachusetts individuals and corporations. There are in this State, in addition to these, a number of distributing plants for creameries owned and operated in other States. For instance, the Maine Creamery Company of Bangor, Me., has offices at 12 Foster Wharf, Boston. The Turner Centre Creamery of Auburn, Me., has distributing houses in Boston, Worcester, Taunton and Lowell, and ships to these points butter, cream, and to one at least skimmed milk.¹ The New England Creamery of Livermore Falls, Me., distributes through a Massachusetts company of the same name in Everett, which also distributes the "Hampden Creamery" goods. The Lyndonville Creamery of Lyndonville, Vt., has a plant at Watertown, from which it distributes milk, cream and butter. J. L. Humphrey, Jr., has four plants, one each in New Bedford, Fall River, Taunton and Brockton, for the distribution of butter and renovated butter from his Iowa creameries. The Armours, Swifts, Hammonds, Morrisises and other large packing houses, all representing western-made goods, distribute quantities of butter and renovated butter from their numerous establishments scattered over the State. Some of these also put out oleomargarine. Besides these, there is a considerable number of creamery companies and so-called creameries which buy their stock of producers in this and other States. These in the aggregate do a large business. Other private dairies or creameries also have town offices, restaurants, etc. The above is difficult of strict classification.

A number of dairies are producing milk and cream under conditions and of a quality which command a price higher than that ruling the general market, and at least two are selling certified milk.

¹ Pasteurized skimmed milk and cream are put together in the proper proportions required for standard milk, in the Boston plant, and the milk thus made is placed upon the market.

Creameries and Milk Depots in Massachusetts.

LOCATION.	Name.	Co-operative or Proprietary.	Superintendent or Manager.
Amherst,	Amherst Creamery,	Proprietary,	F. J. Humphrey, agent.
Amherst,	Fort River,	Proprietary,	E. A. King.
Amherst,	Dairy Farming Course, Massachusetts Agricultural College.	Educational,	Prof. W. P. Brooks, director.
Ashfield,	Ashfield Creamery,	Co-operative,	William Hunter.
Belchertown,	Belchertown Creamery,	Co-operative,	M. G. Ward, president.
Boston, 494 Rutherford Avenue,	H. P. Hood & Sons, ¹	Proprietary,	H. P. Hood & Sons.
Boston, office 1171 Tremont Street,	Alden Bros., ²	Proprietary,	Charles L. Alden.
Boston, Wales Place,	Elm Farm Milk Company,	Proprietary,	James H. Knapp, manager.
Boston, 556 Rutherford Avenue,	D. Whiting & Sons,	Proprietary,	D. Whiting & Sons.
Boston, 388 Rutherford Avenue,	Boston Dairy Company,	Proprietary,	Boston Dairy Company.

¹ H. P. Hood & Sons have branches at 193 Alley Street, Lynn; 252 Bridge Street, Salem; 105 Holmes Street, Dorchester; 425 Main Street, Malden.

² Alden Bros.' Creamery is at 28 Duncan Street.

Creameries and Milk Depots in Massachusetts — Continued.

LOCATION.	Name.	Co-operative or Proprietary.	Superintendent or Manager.
Boylston,	Adelphia Creamery,	Proprietary,	E. M. Laws.
Bridgewater,	Plymouth County Creamery, ¹	Proprietary,	S. Neilson Houlburg.
Brimfield,	- - - - -	Proprietary,	F. N. Lawrence.
Cambridge, 158 Massachusetts Avenue.	C. Brigham Company,	Proprietary,	C. Brigham Company.
Cheshire (P. O., Adams),	Greylock Creamery,	Co-operative,	C. J. Fales, president.
Cummington,	Cummington Creamery,	Co-operative,	M. S. Howes, president.
Easthampton,	Hampton,	Co-operative,	W. H. Wright, treasurer.
Egremont (P. O., North Egremont),	Egremont Creamery,	Co-operative,	H. O. Harrington.
Everett,	Hampden Creamery Company,	Proprietary,	Hampden Creamery Company.
Framingham (P. O., South Framingham).	Echo Farm Company, ¹	Proprietary,	J. A. Turner.
Fitchburg, 26 Cushing Street,	Fitchburg Creamery,	Proprietary,	G. S. Learned.
Gardner,	Boston Dairy Company,	Proprietary,	Boston Dairy Company.

Groton,	.	.	.	Lawrence Creamery,	.	Proprietary,	Myron P. Swallow.
Heath,	.	.	.	Cold Spring Creamery,	.	Proprietary,	I. W. Stetson & Son.
Hinsdale,	.	.	.	Hinsdale Creamery,	.	Proprietary,	Hinsdale Creamery Company.
Lee,	.	.	.	Lenox Creamery,	.	Co-operative,	P. A. Agnew, manager.
Leominster,	.	.	.	Leominster Creamery,	.	Proprietary,	G. H. Wass, manager.
Marlborough,	.	.	.	Este's Creamery,	.	Proprietary,	F. F. Este.
Montague,	.	.	.	Montague Creamery,	.	- ²	W. A. Pease, manager.
Monterey,	.	.	.	Berkshire Hills Creamery,	.	Co-operative,	Henry Clapp, treasurer.
New Boston,	.	.	.	Berkshire Creamery,	.	Co-operative,	N. H. Snow, president.
New Salem (P. O., Millington),	.	.	.	New Salem Co-operative Creamery Company.	.	Co-operative,	W. A. Moore.
North Brookfield,	.	.	.	North Brookfield Creamery,	.	Proprietary,	H. A. Richardson.
Northfield,	.	.	.	Northfield Creamery,	.	Co-operative,	L. R. Smith.
Orange (P. O., North Orange),	.	.	.	North Orange Creamery,	.	Co-operative,	C. E. Dunbar.
Sheffield,	.	.	.	Willow Brook Dairy, ³	.	Proprietary,	George Patterson.

¹ Cream only.² Leased and operated by Tait Bros., Springfield.³ Receiving station, milk shipped to New York.

Creameries and Milk Depots in Massachusetts — Concluded.

LOCATION.	Name.	Co-operative or Proprietary.	Superintendent or Manager.
Shelburne,	Shelburne,	Co-operative,	Ira Barnard.
Shelburne Falls,	Totman's Creamery,	Proprietary,	T. M. Totman.
Southborough,	Deerfoot Farm,	Proprietary,	S. H. Howes, manager.
Springfield,	Springfield Milk Association,	Co-operative,	F. B. Allen.
Springfield,	Tait Bros.,	Proprietary,	Tait Bros.
Uxbridge,	Farnum Creamery,	Proprietary,	Geo. A. Farnum.
Westfield (P. O., Wyben),	Wyben Springs Creamery,	Co-operative,	C. H. Wolcott.
West Newbury,	West Newbury Creamery,	Co-operative,	R. S. Brown, treasurer.
West Stockbridge,	F. D. Shove Milk Factory, ¹	Proprietary,	C. E. Hardy, superintendent.
Williamsburg,	Williamsburg Creamery,	Co-operative,	E. T. Barrus, president.
Worthington (P. O., Ringville),	Worthington Creamery,	Co-operative,	M. R. Bates, superintendent.
Worcester,	Wachusett Creamery,	Proprietary,	E. H. Thayer & Co.

¹ Milk for New York market.

EXPENSES.

The following is a classified statement of the expenses for the year ending Nov. 30, 1907 : —

Bureau: compensation and travelling expenses,	\$339 31
Agents: compensation,	1,936 50
Agents: travelling expenses and samples purchased,	2,527 84
General agent: travelling and necessary expenses,	493 46
Chemists: analyses, tests, court attendance,	1,120 50
Printing and supplies,	105 92
Educational,	476 47
<hr/>	
Total,	\$7,000 00

P. M. HARWOOD,

General Agent.

Accepted and adopted as the report of the Dairy Bureau.

CARLTON D. RICHARDSON.

JOHN M. DANFORTH.

HENRY E. PAIGE.

Public Document

No. 60

EIGHTEENTH ANNUAL REPORT

OF THE

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 15, 1909.



BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,

18 POST OFFICE SQUARE.

1909.

EIGHTEENTH ANNUAL REPORT

OF THE

Mass:

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 15, 1909.



BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,

18 POST OFFICE SQUARE.

1909.

APPROVED BY
THE STATE BOARD OF PUBLICATION.

614.32M3

D132

1908

B

DAIRY BUREAU—1908.

CARLTON D. RICHARDSON, WEST BROOKFIELD, *Chairman.*

HENRY E. PAIGE, AMHERST.

WARREN C. JEWETT, WORCESTER.

Secretary.

J. LEWIS ELLSWORTH, *Executive Officer and Secretary of the
State Board of Agriculture.*

General Agent.

P. M. HARWOOD.

ADDRESS, ROOM 136, STATE HOUSE, BOSTON.

The Commonwealth of Massachusetts.

REPORT.

The year 1908 has not been unusual in point of violations of dairy laws; in fact, the number of such violations has been rather less than in some previous years; 104 prosecutions for violations of oleomargarine laws, 51 for violations of the renovated butter law and 14 for violation of the milk laws is the record. The amount of oleomargarine handled in the State is about the same as formerly; it is, however, handled in more legitimate ways. Renovated butter seems to be falling off in total sales. The greatest popular interest has been in the cases for violation of the milk laws.

During the early part of the year there was much agitation in relation to the milk standard. Numerous bills were presented to the Legislature, with the result that a new standard was adopted. The standard now calls for 12.15 per cent total milk solids and 3.35 per cent milk fats throughout the entire year.

There is a strong and growing feeling in the State — a feeling that is shared by nearly all classes — that the milk standard law, unwisely enforced, incurs unwarranted hardship upon the producer. In the opinion of this Bureau such a law is mainly for the purpose of holding the milk product at a given point, in the interests of the public at large. Our policy and practice is, wherever we find milk which contains added water, to put the person nearest responsible for the condition of such milk into court under the milk adulteration act (R. L., c. 56, § 55). Whenever we find milk below the standard and still apparently unadulter-

ated, we first notify the producer, and frequently offer him suggestions as to how to improve its quality. We find producers as a rule desirous of obeying the laws of our Commonwealth, and have thus far found no difficulty in procuring the desired result without resorting to the extreme of prosecution.

Some persons think that a small amount of water can be added to milk without detection. This we believe to be a mistake. The moment a man begins to add even a small amount of water to milk, he becomes an object of suspicion to the chemist who makes the analysis. It is an unwise and dangerous thing to do, and the quicker such notion is driven out of the heads of those who produce and handle milk, the better. A man can hardly make a greater mistake than to add water to the milk with any assurance of not being detected sooner or later. This is a fact well recognized by those who enforce the laws. The man who starts on a down grade goes lower and lower with each advancing step. If it is a matter of adding water to milk, some day he will get caught.

In looking over the lists of defendants as prosecuted by the Dairy Bureau for various offences during the last six years, it is gratifying to note that out of the 570 different defendants only 17 have repeated, or had to be brought into court a second time.

In the educational work 22 meetings have been addressed by the members of the Bureau and its general agent. Investigations have been made concerning milk as produced on Massachusetts farms. Farmers have been urged to co-operate; to raise more grain; to use more reasonable care in the production and handling of milk, etc. Consumers have been urged to their part in properly caring for milk after it has been delivered; to use more milk; and not to object to a reasonable price for the good, clean article, recognizing that such milk cannot be produced at a low price.

A new "Manual of Dairy Laws of Massachusetts," with annotations and a digest of Supreme Court decisions, has been prepared by the general agent.

Two years ago we suggested the desirability of a Massa-

chusetts Dairymen's Association, combining all the dairy interests of the State, for the purposes of co-operation, holding of dairy exhibits, etc., uplifting by competition and friendly rivalry to see who can produce the best goods, whether it be milk, cream, butter or other milk product. Such an association properly organized and officered should offset the pessimistic and depressing views too often taken of the milk situation. Upbuilding forces from within and of the producers themselves are now most needed. We therefore again urge the dairy-producing industry of this State to thus organize.

The personnel of the Bureau and its staff has changed only in one respect, W. C. Jewett having been appointed by Governor Guild in place of John M. Danforth, whose term had expired. C. D. Richardson has continued as chairman, H. E. Paige as a member, J. Lewis Ellsworth secretary, P. M. Harwood general agent, A. W. Lombard agent, B. F. Davenport and H. C. Emerson chemists, and four persons have been temporarily employed as agents during some part of the year.

The summary of the year's work is as follows:—

Total number of inspections,	¹ 7,091
Number of inspections where no sample was taken,	5,516
Number of samples of butter and oleomargarine, all purchased,	1,497
Number of samples of milk and cream, many of which were purchased,	321
Cases entered in court,	² 171
Cases tried in court,	169
Meetings addressed by chairman of the Bureau,	10
Meetings addressed by Mr. Jewett,	2
Meetings addressed by the general agent,	10

Cases prosecuted during the twelve months ending Nov. 30, 1908, by months and courts, with law violated, and results, are as follows:—

¹ There were 243 extra samples taken during the inspections, therefore this number is 243 less than the sum of the next three items.

² Defendant in two cases ran away after having been summoned.

Court.	Month.	Number.	Law violated.	Convicted.	Discharged.
Malden,	December,	2	1 oleomargarine, 1 renovated butter.	2	-
Woburn,	January,	1	Milk,	1	-
Worcester,	January,	1	Milk,	1	-
Ware,	January,	3	Milk,	3	-
North Adams,	February,	22	18 oleomargarine, 4 renovated butter.	22	-
Greenfield,	February,	1	Milk,	1	-
Woburn,	February,	2	Renovated butter,	-	2
Lawrence,	February,	12	4 renovated butter, 8 oleomargarine.	12	-
Peabody,	February,	2	Renovated butter,	2	-
Salem,	March,	19	16 oleomargarine, 3 renovated butter.	19	-
Brockton,	March,	7	2 oleomargarine, 4 renovated butter, 1 milk.	7	-
Dedham,	March,	5	Renovated butter,	5	-
Lynn,	March,	8	Oleomargarine,	8	-
Lynn,	April,	8	4 oleomargarine, 4 renovated butter.	8	-
Holyoke,	April,	8	2 oleomargarine, 6 renovated butter.	8	-
Ipswich,	April,	12	Oleomargarine,	12	-
Greenfield,	April,	1	Milk,	1	-
Worcester,	April,	12	Oleomargarine,	12	-
Taunton,	April,	8	6 oleomargarine, 2 renovated butter.	8	-
Lowell,	May,	4	Oleomargarine,	4	-
Newburyport,	May,	3	Renovated butter,	2	1
Spencer,	May,	2	Oleomargarine,	2	-
Woburn,	June,	2	Milk,	2	-
Cambridge,	June,	4	Renovated butter,	4	-
Cambridge,	July,	8	4 renovated butter, 4 oleomargarine.	8	-

Court.	Month.	Number.	Law violated.	Convicted.	Discharged.
Worcester, .	July, .	3	2 renovated butter, 1 oleomargarine.	3	—
Cambridge, .	August, .	2	Oleomargarine, .	2	—
Orange, .	September,	1	Milk,	1	—
Ayer, . . .	October, .	1	Milk,	—	1
Greenfield, .	October, .	1	Milk,	1	—
Medford, .	November,	1	Renovated butter, .	1	—
Springfield, .	November,	1	Milk,	1	—
Spencer, .	November,	2	Oleomargarine, .	2	—
Totals, . . .	. . . . .	169	. . . . .	165	4

NOTE. — The Bureau is especially indebted to the milk inspectors of Greenfield, Northampton, Springfield, Taunton, Winchester and Worcester, whose work with us has resulted in cases in court during the year. We also record our indebtedness to all others who have aided us in any way.

The charges in the several cases entered in court for the year ending Nov. 30, 1908, have been as follows:—

Selling renovated butter in unmarked packages,	51
Selling oleomargarine without sign on exposed contents, . . .	1
Selling oleomargarine when butter was asked for,	18
Selling oleomargarine without being registered,	11
Selling oleomargarine without sign in store,	10
Selling oleomargarine in unmarked packages,	6
Selling oleomargarine from restaurants without notice to guests, ¹	60
Selling milk containing added water,	12
Selling skimmed milk from unmarked cans,	1
Selling cream below standard,	1

171

¹ Two cases were entered but not tried, as defendant ran away after being summoned.

The following is a list of inspections without samples and the number of samples taken in the years 1903-08, inclusive:—

YEAR.	Inspections without Samples.	Samples taken.
1903,	4,135	1,395
1904,	4,456	1,157
1905,	4,887	971
1906,	4,985	576
1907,	4,538	1,374
1908,	5,516	1,575
Totals,	28,517	7,048
Averages,	4,752	1,174

OLEOMARGARINE.

For the second time we are able to announce that no licenses for the sale of colored oleomargarine have been issued in this State, and no sale of such goods has been reported to the Bureau during the year.

The following figures show the oleomargarine output for the United States since 1900:—

	<i>Under Old Law.</i>	Pounds.
1900,		107,045,028
1901,		104,943,856
1902,		126,316,472
	<i>Under New Law. .</i>	
1903,		71,804,102
1904,		48,071,480
1905,		49,880,982
1906,		53,146,657
1907,		68,988,850
1908,		79,107,273

It will be noticed that the increase of the 1908 output over that of 1907 was 14 per cent, or only about one-half the increase of 1907 over 1906.

The oleomargarine licenses issued in this State have slightly increased over last year, now being as follows: —

Retail, uncolored,	256
Wholesale, uncolored,	21
<hr/>	
Total,	277

RENOVATED BUTTER.

The use of renovated butter in this State is apparently on the decline, according to our inspectors' reports. Most of the goods now sold are in the print form. The cases in court during the year for violation of the renovated butter law, 51, was the smallest number since 1902. There is now but one licensed concern in this State manufacturing renovated butter.

BUTTER.

The consumption of butter is on the increase year by year, keeping reasonable pace with the increase in population, as shown by the Chamber of Commerce figures for the years from 1900 to 1908: —

	Pounds.
1900,	49,288,306
1901,	50,565,193
1902,	51,897,478
1903,	52,185,924
1904,	56,016,157
1905,	59,596,542
1906,	63,343,776
1907,	63,568,240
1908,	66,772,183

Average annual increase for nine years,	1,942,653
---	-----------

These figures are encouraging, and show that imitations have not as yet made serious inroads into the butter business.

The creameries at Montague and North Orange have been sold and have gone out of business.

The average price paid the local creamery patrons has not varied materially from last year. The average wholesale price of butter in Boston, however, has been about 1 cent per pound lower than in 1907.

The following table shows the average quotation for the best fresh creamery butter in a strictly wholesale way in the Boston market for the last nine years:—

	1908. Cents.	1907. Cents.	1906. Cents.	1905. Cents.	1904. Cents.	1903. Cents.	1902. Cents.	1901. Cents.	1900. Cents.
January, . . .	29.7	30.4	25.2	28.0	22.7	28.0	25.0	25.0	29.5
February, . . .	32.1	31.7	25.2	31.6	24.6	27.0	28.5	25.0	26.0
March, . . .	30.2	30.2	25.5	28.0	24.1	27.0	29.0	23.0	27.0
April, . . .	28.4	32.2	22.2	29.1	21.6	27.5	32.0	22.0	21.0
May, . . .	24.1	31.4	19.9	23.9	19.9	22.5	25.0	19.5	20.5
June, . . .	24.5	24.3	20.2	20.7	18.4	22.75	23.5	20.0	20.5
July, . . .	23.6	25.9	21.0	20.6	18.3	20.5	22.5	20.0	20.5
August, . . .	24.5	26.0	23.8	21.6	19.1	20.0	21.5	21.0	22.0
September, . . .	25.3	29.2	25.6	21.2	20.8	22.0	23.5	22.0	22.5
October, . . .	27.5	29.9	26.9	22.1	21.5	22.5	24.5	21.5	22.0
November, . . .	29.5	27.1	27.6	23.0	24.1	23.5	27.0	24.0	25.0
December, . . .	31.0	27.5	30.7	23.9	25.7	24.5	28.5	24.5	25.5
Averages, . . .	27.5	28.48	24.48	24.47	21.73	26.23	25.0	22.3	23.5

The Chamber of Commerce figures regarding the butter business in Boston for 1907 and 1908 are as follows:—

	1908. Pounds.	1907. Pounds.
Carried over,	6,854,760	6,851,825
Receipts for January,	2,875,253	2,652,155
Receipts for February,	2,529,472	2,669,598
Receipts for March,	3,182,045	2,731,791
Receipts for April,	3,570,013	3,504,867
Receipts for May,	6,123,261	5,339,155
Receipts for June,	11,675,687	8,559,668
Receipts for July,	11,534,423	10,711,647
Receipts for August,	8,800,812	8,703,341
Receipts for September,	8,990,275	6,778,041

	1908. Pounds.	1907. Pounds.
Receipts for October,	4,707,422	5,982,162
Receipts for November,	2,268,606	3,302,617
Receipts for December,	3,585,918	2,654,185
Total supply,	76,688,947	70,441,052
Exports for twelve months, deduct,	868,164	18,052
Net supply,	75,820,783	70,423,000
Storage stock December 26, deduct,	9,048,600	6,854,760
Consumption for twelve months,	66,772,183	63,568,240
Increase in consumption for 1908,	3,203,943	

CREAM.

There has been a very great increase in the amount of cream shipped into and consumed in this State during the last ten years. It is estimated that a total of at least 2,000,000 gallons of cream is now handled in Boston alone. This of course is not all consumed in Boston. Another interesting fact is that there is now a much larger proportionate quantity of heavy cream used than was formerly the case. According to the last report of the Boston milk inspector, there are 84 creameries shipping cream to Boston dealers, as follows:—

Vermont,	36
Maine,	23
New Hampshire,	12
New York,	9
Massachusetts,	4
Total,	84

This cream is mostly “pasteurized.” What is known as light cream runs from 15 to 20 per cent, and heavy cream from 35 to 45 per cent milk fat. A standard for cream, calling for at least 15 per cent milk fat, was established by the Legislature of 1907.

MILK.

There are two facts in connection with the dairy business in Massachusetts worthy of note, the first being that the assessors' returns for the last three years show a decline in the number of milch cows, May 1, 1908, showing 7,617 less than were assessed May 1, 1907. Among the reasons apparently responsible for this may be mentioned competition from other States, decreased consumption of raw whole milk, increased requirements by health authorities and the demands of the times, high cost of grain and scarcity of competent farm help. The second fact is disclosed by the report of the milk shipped into Boston by rail, as per returns to the Railroad Commissioners, which for the twelve months covered in this report was 103,831,278½ quarts, as against 109,882,190½ quarts in 1907 and 114,233,976 quarts in 1906, — a reduction of 6,050,912 quarts from last year, when there was a reduction of 4,351,785½ quarts from the year before, making a total drop in two years of nearly ten and a half million quarts, and this in the face of a constantly increasing population. This reduction was constant, month by month, with two exceptions, from December, 1906, to September, 1908, when a gain commenced to show itself. Of course this is not an exact measure of the decline in the use of raw whole milk in greater Boston, but it is a strong indication that there has been a serious decline in that respect. Some of the causes which have conspired to bring about this condition appear to be: first, that there has been too much "scare" about the use of raw milk; second, there has been too much prejudice raised against paying the price necessary to procure the good, clean article of milk now upon the market; third, the increased use of powdered, concentrated and condensed milks; fourth, the increased use of cream; and fifth, the working people have been more or less unemployed during portions of this period. Perhaps this was all necessary under the circumstances, but is it not a condition to be regretted? Science supports and theory and practice endorse the fact that there is no milk so easily

digested and nutritious as good, clean, whole milk, just as the cow gives it.

Let us hope, then, that the time is at hand when confidence will be restored and the public once more brought to consume its normal amount of raw whole milk.

The price of carred milk has remained the same as one year ago, that paid to the producer at the car for the entire territory supplying it averaging 3.33 cents per quart in summer and 4.17 cents per quart in winter, wherever cans are washed by the contractors, — a price still too low, considering the demands of present-day conditions.

The question of the constitutionality of the milk standard law has been again raised, and is now pending in the Supreme Court.

Appended Tables.

Table I. shows analysis of milk just as it was delivered at the railroad stations by 44 farmers, in June, 1908, and gives a fair idea of the condition of early summer milk as regards solid content in the milk-producing districts at that time of the year.

Tables II. and III. show a method of dealing with those producers who are complained of for selling milk which, while it is unadulterated, is below the legal standard.

Table IV. shows analyses where two out of eleven cans of milk contained added water. This case was appealed from district to Superior Court, fought out before a jury, and the sentence of lower court confirmed.

Table V. shows a case where all the cans of milk contained added water, also analyses of samples of milk of known purity from individual animals in the herd producing the milk.

Table VI. shows analyses of milk and cream where prosecutions followed.

Table VII. shows number of cows assessed in Massachusetts at different periods.

Table VIII. shows amount of milk brought into Boston by different railroads for the twelve months covered by this report, and totals for the two preceding years.

TABLE I. — *Samples of Milk for Boston Market, as delivered at Car by Farmers, taken from C. Brigham Company, at Barre Plains, Mass.*

SAMPLE No.	Number Cans.	Number Cows.	Solids not Fat.	Fat.	Total Solids.	Asb.	Refrac- tion.
1, ¹	7	8	8.92	2.80	11.72	.66	43.3
2,	12	12	8.80	3.20	12.00	.62	43.8
3,	33	30	8.56	3.00	11.56	.68	42.5
4,	21	15	8.78	3.30	12.08	.66	43.5
5,	16	—	8.38	3.10	11.48	.58	42.1
6,	29	20	8.70	3.30	12.00	.54	42.9
7,	13	14	8.48	3.70	12.18	.54	42.8
8,	14	11	8.70	3.10	11.80	.56	42.0
9,	19	19	8.66	3.80	12.46	.56	43.2
10,	11	10	8.10	3.20	11.30	.56	43.3
11,	7	5	9.14	3.40	12.54	.54	44.2
12,	17	16	8.56	3.30	11.86	.60	42.3
13,	6 $\frac{1}{2}$	10	9.42	3.90	13.32	.66	44.9
14,	10	—	8.78	4.30	13.08	.70	43.0
15,	12	10	8.94	4.00	12.94	.62	43.6
16,	16	—	8.56	3.30	11.86	.70	42.3
17,	6	—	8.76	3.40	12.16	.56	43.2
18,	24	20	8.76	4.00	12.76	.60	43.7
19, ¹	16	11	9.28	2.80	12.08	.60	44.0
20,	18	16	8.48	3.40	11.88	.62	42.2
21,	18	14	8.66	3.50	12.16	.60	43.2
22,	14	14	8.76	3.30	12.06	.56	43.9
23,	6	—	8.60	4.00	12.60	.60	43.2
24,	21	—	8.90	3.40	12.30	.56	43.4
25,	4	—	8.26	3.90	12.16	.50	42.1
26,	4	4	8.90	3.00	11.90	.64	42.4
27,	5	—	8.80	4.20	13.00	.60	43.5
28,	6	—	8.74	3.90	12.64	.64	43.3
29,	7	—	9.00	3.90	12.90	.56	42.7
30,	9	—	8.80	4.00	12.80	.70	43.8
31,	8	9	9.16	3.70	12.86	.62	43.6
32,	7	4	8.10	4.30	12.40	.58	42.2
33,	9	13	8.44	3.60	12.04	.58	42.2
34,	20	20	8.88	3.40	12.28	.56	43.2
35,	18	16	8.00	3.90	11.90	.56	43.0
36,	10	8	8.40	3.10	11.50	.54	42.2
37, ²	15	15	—	—	—	—	—
38,	11	10	9.54	3.70	13.24	.62	44.9
39,	9	8	9.18	3.20	12.38	.62	43.7
40,	7	—	8.98	3.70	12.68	.54	43.4
41,	7	—	8.86	4.10	12.96	.64	43.2
42,	11	10	8.84	4.10	12.94	.68	43.6
43,	10	—	9.00	3.80	12.80	.60	42.5
44,	14	15	8.50	3.70	12.20	.58	43.2
Average analysis of 41 samples,			8.73	3.61	12.34	.60	43.1

¹ Manifestly not normal milk, therefore not figured in the averages.² Sample lost.

NOTE. — This milk was afterward mixed and recanned before shipping to Boston, making a milk of good standard quality. It will be observed, however, that in point of solids not fat the normal milk varied from 8 to 9.54 per cent; in fat the variation was from 3 to 4.3 per cent; and in total solids from 11.48 to 13.32 per cent. It will be noticed also that 13 of the 41 samples of normal milk were below the legal standard in fat, and 15 were below the legal standard in total solids.

TABLE II. — *Analysis of Samples of Milk taken from Cans of a Farmer, as delivered to the Springfield Co-operative Milk Association.*

SAMPLE No.	Solids not Fat.	Fats.	Total Solids.	Refraction.
4,	8.97	4.8	13.77	—
5,	9.19	4.0	13.19	—
6,	8.82	3.4	12.22	—
7,	9.12	4.5	13.62	—
8,	8.68	3.8	12.48	—
9,	8.45	3.6	12.05	—
10,	8.51	3.2	11.71	42.5
11,	8.40	3.4	11.80	41.7
12,	8.21	3.4	11.61	41.4
13,	8.86	3.8	12.66	—
14,	8.42	3.2	11.62	42.0
15,	8.59	3.9	12.49	—
16,	8.29	3.2	11.49	41.4
17,	8.06	3.5	11.56	41.0

NOTE. — There being nothing about the chemical analysis of this milk or the refraction of light in the milk serum to indicate added water, further investigation was made and samples of known purity were taken, as shown in Table III.

TABLE III. — *Analysis of Milk of Known Purity taken from Individual Animals, and the Mixed Milk of the Herd producing the Milk referred to in Table II.*

Cow No.	Breed and Amount.	Solids not Fat.	Fats.	Total Solids.	Ash.	Refrac-tion.
1	—, 4 quarts,	8.47	3.3	11.77	.71	41.9
2	Registered Holstein, 4½ quarts,	8.33	3.6	11.93	.68	41.2
3	High-grade Holstein, 8 quarts,	8.16	3.6	11.76	.65	42.6
4	High-grade Holstein, 7 quarts,	8.22	3.1	11.32	.64	42.2
5	Ayresshire, 6 quarts, . . .	8.78	3.4	12.18	.71	42.5
6	Shorthorn, 5 quarts, . . .	8.72	3.7	12.42	.68	42.5
7	Ayresshire and Holstein, 4 quarts.	8.38	3.8	12.18	.65	42.5
8	High-grade Holstein, 4 quarts,	8.61	3.2	11.81	.67	42.0
9	Holstein and Hereford, 4 quarts.	8.45	3.6	12.05	.66	42.3
10	—, 4 quarts,	9.29	4.2	13.49	.71	43.7
11	Pure-bred Holstein, 1 pint, .	11.74	6.6	18.34	1.02	49.9
12	—, 3 quarts,	9.22	4.1	13.32	.69	43.5
13	Sample lost,	—	—	—	—	—
	Mixed milk of thirteen cows,	8.57	3.5	12.07	.69	42.6

NOTE. — The owner of this herd was advised to buy a mixing can (which he did), and then, if the milk did not come up to standard, to either dispose of one or more cows giving milk of low quality and replace with cows giving milk richer in solids, or to use the fore milk of the poorer cows for some other purpose. The milk from this herd has since been satisfactory.

TABLE IV. — *Analysis of Milk taken from a Massachusetts Producer, September, 1908.*

AGENT'S No.	Pro- ducer's Mark.	Chemist's No.	Solids not Fat.	Fat.	Total Solids.	Refrac- tion.	Condition.
34, . . .	9	9,938	8.74	4.0	12.74	41.8	O.K.
35, . . .	9	9,939	8.71	4.0	12.71	41.8	O.K.
36, . . .	9	9,940	8.79	4.0	12.79	41.8	O.K.
37, . . .	9	9,941	8.76	4.0	12.76	42.3	O.K.
38, . . .	9	9,942	8.76	4.0	12.76	42.1	O.K.
39, . . .	9+	9,943	6.16	3.0	9.16	33.7	Watered.
45, . . .	9+	9,944	8.65	5.2	13.85	43.1	O.K.
46, . . .	9+	9,945	8.96	5.1	14.06	43.2	O.K.
47, . . .	9+	9,946	5.48	3.4	8.88	31.7	Watered.
48, . . .	9+	9,947	8.78	5.5	14.28	43.1	O.K.
49, . . .	9+	9,948	8.83	5.0	13.83	43.2	O.K.

NOTE. — The samples were taken in the evening, those marked 9 being the freshly drawn and mixed night's milk. The fat in these samples showed absolutely no variation and .08 of 1 per cent was the widest variation shown in solids not fat, and $\frac{1}{2}$ of 1 degree was the widest variation in the refraction of light, all of which shows how carefully the samples were taken and analyzed. The cans marked 9+ were said by the defendant to contain mixed morning's milk which had stood all day, and of course it was more difficult to so thoroughly mix in taking samples; nevertheless, the widest variation in total solids was .45 of 1 per cent. The refraction of light in the milk serum rarely if ever goes below 40 in samples of mixed milk. The analysis of the two samples of watered milk indicates, notwithstanding the mark of 9+ on the stopper, that milk sample 39 was, in a large measure at least, night's milk. The story told by this table is that cans 39 and 47 originally contained only about five quarts of milk each, and subsequently had been filled with water.

TABLE V. — *Analysis of Samples of Milk taken from Cans as delivered by a Farmer to a Milk Peddler, in a Western Massachusetts City.*

SAMPLE NO.	Mark on Can.	Solids not Fat.	Fat.	Total Solids.	Refraction.
1,	X	8.11	3.6	11.71	38.65
2,	X	8.13	3.6	11.73	38.60
3,	X	8.09	3.6	11.69	38.30
4,	I	8.06	3.8	11.86	38.50
5,	I	7.88	3.8	11.68	38.05
6,	I	8.26	3.9	12.16	39.05

Analysis of Samples of Known Purity from the Above Owner's Herd.

SAMPLE NO.	Cows.	Amount (Quarts).	Solids not Fat.	Fat.	Total Solids.	Refraction.
1, . . .	4 and 5	5	8.58	3.8	12.38	42.0
2, . . .	8	4	8.72	4.7	13.42	41.3
3, . . .	3	6	9.10	4.0	13.10	41.9
4, . . .	9	4	9.04	4.1	13.14	42.3
5, . . .	6 and 7	7	8.89	6.7	15.59	42.5
6, . . .	2	4	8.68	5.2	13.88	41.8

NOTE. — The above-mentioned farmer was summoned into court and pleaded guilty to having in his possession, with intent to sell, milk to which water had been added, and was fined \$50, which he paid.

TABLE VI. — *Milk Analyses upon which were based the Prosecutions of 1908.*

CASE No.	Solids not Fat.	Fat.	Total Solids.	Refrac- tion.	Remarks.
1, . .	8.24	3.2	11.44	39.0	Showed added water.
2, . .	7.36	3.6	10.96	37.2	Showed added water.
3, . .	7.41	3.6	11.01	37.9	Showed added water.
4, . .	8.64	2.8	11.44	42.4	Showed skimming.
5, . .	6.99	3.6	10.59	37.4	Showed added water.
6, . .	9.64	.03	9.67	—	Skimmed milk sold from un- marked can.
7, . .	5.79	2.5	8.29	33.2	Showed added water.
8, ¹ . .	—	7.2	—	—	Showed cream below standard.
9, . .	6.66	3.8	10.46	34.0	Showed added water.
10, . .	7.60	3.10	10.70	33.0	Showed added water.
11, . .	6.92	3.8	10.72	35.6	Showed added water.
12, . .	6.56	3.1	9.66	35.8	Showed added water.
13, . .	5.48	3.4	8.88	31.7	Showed added water.
14, . .	7.88	3.8	11.68	38.05	Showed added water.

¹ Cream.TABLE VII. — *Number of Cows assessed in Massachusetts, by Five-year Periods, 1865–1905 ;— Annually, 1905–08.*

May 1, 1865,	145,801
May 1, 1870,	161,185
May 1, 1875,	149,765
May 1, 1880,	174,859
May 1, 1885,	167,817
May 1, 1890,	200,658
May 1, 1895,	175,016
May 1, 1900,	180,245
May 1, 1905,	181,920
May 1, 1906,	181,816
May 1, 1907,	179,075
May 1, 1908,	171,458

TABLE VIII. — *Milk brought into Boston by Different Railroads, December, 1907, to December, 1908, as reported by the Railroad Commissioners.*

DATE.	Boston & Albany (Quarts).	Boston & Maine (Quarts).	New York, New Haven & Hartford (Quarts).	Total (Quarts).
1907.				
December,	1,174,929	5,171,399	1,817,197	8,163,525
1908.				
January,	1,241,221	5,293,584	1,934,791	8,469,596
February,	1,178,499	4,925,676	1,822,678	7,926,853
March,	1,147,551	5,695,014	2,013,002	8,855,567
April,	1,328,558	5,254,103	1,987,127	8,569,788
May,	1,524,713	5,536,851½	2,029,476	9,091,040½
June,	1,541,900	5,857,026	1,985,393	9,384,319
July,	1,349,026	5,964,741	1,858,796	9,172,563
August,	1,299,259	5,785,903	1,817,954	8,903,116
September,	1,317,270	5,493,163	1,806,924	8,617,357
October,	1,318,707	5,347,172	1,984,437	8,650,316
November,	1,169,345	5,017,521	1,840,372	8,027,238
Total,	15,590,978	65,342,153½	22,898,147	103,831,278½

Total for corresponding twelve months, 1905-06, 114,233,976 quarts.

Total for corresponding twelve months, 1906-07, 109,882,190½ quarts.

CREAMERIES, MILK DEPOTS, ETC.

Appended we give a revised list of the principal creameries, milk depots, etc., owned and operated by Massachusetts individuals and corporations. There are in this State, in addition to these, a number of distributing plants for creameries owned and operated in other States. For instance, the Maine Creamery Company of Bangor, Me., has offices at 12 Foster Wharf, Boston. The Turner Centre Creamery of Auburn, Me., has distributing houses in Boston, Worcester, Taunton and Lowell, and ships to these points butter, cream, and to one at least skimmed milk.¹ The New England Creamery of Livermore Falls, Me., distributes through a Massachusetts company of the same name

¹ Pasteurized skimmed milk and cream are put together in the proper proportions required for standard milk, in the Boston plant, and the milk thus made is placed upon the market.

in Everett, which also distributes the "Hampden Creamery" goods. The Lyndonville Creamery of Lyndonville, Vt., has a plant at Watertown, from which it distributes milk, cream and butter. J. L. Humphrey, Jr., has four plants, one each in New Bedford, Fall River, Taunton and Brockton, for the distribution of butter and renovated butter from his Iowa creameries. The Armour's, Swifts, Hammonds, Morris's and other large packing houses, all representing western-made goods, distribute quantities of butter and renovated butter from their numerous establishments scattered over the State. Some of these also put out oleo-margarine. Besides these, there is a considerable number of creamery companies and so-called creameries which buy their stock of producers in this and other States. These in the aggregate do a large business. Other private dairies or creameries also have town offices, restaurants, etc. The above is difficult of strict classification.

A number of dairies, including that of the Massachusetts Agricultural College, are producing milk and cream under conditions and of a quality which command a price higher than that ruling the general market, and several are selling certified milk.

Co-operative Creameries.

LOCATION.	Name.	Superintendent or Manager.
1. Ashfield, . . .	Ashfield Creamery, . . .	William Hunter, manager.
2. Belchertown, . . .	Belchertown Creamery, . . .	M. G. Ward, president.
3. Cheshire (P. O. Adams).	Greylock Creamery, . . .	C. J. Fales, president.
4. Cummington, . . .	Cummington Creamery, . . .	M. S. Howes, president.
5. Easthampton, . . .	Hampton Creamery, . . .	W. H. Wright, treasurer
6. Egremont (P. O. Great Barrington).	Egremont Creamery, . . .	C. A. Tyrrell, manager.
7. Lee, . . .	Lenox Creamery, . . .	P. A. Agnew, manager.
8. Monterey, . . .	Berkshire Hills Creamery, . . .	Henry Clapp, treasurer.
9. New Boston, . . .	Berkshire Creamery, . . .	F. M. Rugg, president.
10. New Salem (P. O. Millington).	New Salem Creamery, . . .	W. A. Moore, president.
11. Northfield, . . .	Northfield Creamery, . . .	L. R. Smith, superintendent.
12. Shelburne, . . .	Shelburne Creamery, . . .	Ira Barnard, manager.
13. Westfield (P. O. Wyben).	Wyben Springs Creamery, . . .	C. H. Wolcott, manager.
14. West Newbury, . . .	West Newbury Creamery, . . .	R. S. Brown, treasurer.
15. Williamsburg, . . .	Williamsburg Creamery, . . .	E. T. Barrus, president.
16. Worthington (P. O. Ringville).	Worthington Creamery, . . .	M. R. Bates, superintendent.

Proprietary Creameries.

LOCATION.	Name.	Owner or Manager.
1. Amherst, . . .	Amherst Creamery, . . .	F. J. Humphrey, agent.
2. Amherst, . . .	Fort River Creamery, . . .	E. A. King.
3. Boylston, . . .	Adelpha Creamery, . . .	E. M. Laws.
4. Bridgewater, . . .	Plymouth County Creamery, ¹	S. Neilson Houlburg.
5. Brimfield, . . .	Crystal Brook Creamery, . . .	F. N. Lawrence.
6. Everett, . . .	Hampden Creamery Com- pany.	Hampden Creamery Com- pany.
7. Framingham (P. O. South Framing- ham).	Echo Farm Company, ¹ . . .	J. A. Turner.
8. Fitchburg, 26 Cush- ing Street.	Fitchburg Creamery, . . .	G. S. Learned.
9. Gardner, . . .	Boston Dairy Company, . . .	Boston Dairy Company.
10. Groton, . . .	Lawrence Creamery, . . .	Myron P. Swallow.
11. Heath, . . .	Cold Spring Creamery, . . .	I. W. Stetson & Son.
12. Hinsdale, . . .	Hinsdale Creamery, . . .	Ashley B. Clark, treasurer.
13. Leominster, . . .	Leominster Creamery, . . .	G. H. Wass, manager.
14. Marlborough, . . .	Este's Creamery, . . .	F. F. Este.
15. North Brookfield, . . .	North Brookfield Creamery, . . .	H. A. Richardson.
16. Shelburne Falls, . . .	Shelburne Falls Creamery, . . .	T. M. Totman.
17. Uxbridge, . . .	Farnum Creamery, . . .	Geo. A. Farnum.

¹ Cream only.*Educational.*

Amherst, . . .	Dairy Industry Course, Massachusetts Agricul- tural College.	W. P. B. Lockwood, professor in charge.
----------------	--	--

Milk-distributing Depots.

NAME.	Location.	Manager.
Alden Bros., . . .	Boston, office 1171 Tremont Street, depot 28 Duncan Street.	Charles L. Alden.
Boston Dairy Company, . . .	Boston, 484 Rutherford Avenue, . . .	W. A. Grostein.
Elm Farm Milk Company, . . .	Boston, Wales Place, . . .	James H. Knapp.
H. P. Hood & Sons, . . .	Boston, 494 Rutherford Avenue, 24 Anson Street, Forest Hills. Lynn, 193 Alley Street. Malden, 425 Main Street. Salem, 252 Bridge Street. Watertown, 289 Pleasant Street.	Charles H. Hood.
D. Whiting & Sons, . . .	Boston, 570 Rutherford Avenue, . . .	George Whiting.

Milk-distributing Depots — Concluded.

NAME.	Location.	Manager.
C. Brigham Company, .	Cambridge, 158 Massachusetts Avenue.	John K. Whiting.
Deerfoot Farm, . . .	Southborough,	S. H. Howes.
Springfield Co-Operative Milk Association.	Springfield,	F. B. Allen.
Tait Bros.,	Springfield,	Tait Bros.
Wachusett Creamery, .	Worcester,	E. H. Thayer & Co.

Milk Laboratories.

Walker-Gordon Laboratory.	Boston, 1111 Boylston Street, .	George Franklin.
H. P. Hood & Sons, Dairy Laboratory.	Boston, 70 Huntington Avenue.	W. M. Brown.

Milk-receiving Depots.

F. D. Shove Milk Factory,	West Stockbridge (milk shipped to New York).	C. E. Hardy.
Willow Brook Dairy Company.	Sheffield (milk shipped to New York),	George Patterson.

EXPENSES.

The following is a classified statement of the expenses for the year ending Nov. 30, 1908:—

Bureau: compensation and travelling expenses, . . .	\$377 63
Agents: compensation,	2,192 50
Agents: travelling expenses and samples purchased, . .	2,625 94
General agent: travelling and necessary expenses, . . .	523 35
Chemists: analyses, tests, court attendance,	1,796 20
Printing and supplies,	248 38
Educational,	236 00
Total,	\$8,000 00

P. M. HARWOOD,
General Agent.

Accepted and adopted as the report of the Dairy Bureau.

CARLTON D. RICHARDSON.
HENRY E. PAIGE.
W. C. JEWETT.

1132
1909

Public Document

No. 60

NINETEENTH ANNUAL REPORT

OF THE

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 15, 1910.



BOSTON:
WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
18 POST OFFICE SQUARE.
1910.

NINETEENTH ANNUAL REPORT

OF THE

Mass:
= DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 15, 1910.



BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,

18 POST OFFICE SQUARE.

1910.

APPROVED BY
THE STATE BOARD OF PUBLICATION.

614.32M3

D132

1909

B

DAIRY BUREAU—1909.

CARLTON D. RICHARDSON, WEST BROOKFIELD, *Chairman.*

HENRY E. PAIGE, AMHERST.

WARREN C. JEWETT, WORCESTER.

Secretary.

J. LEWIS ELLSWORTH, *Executive Officer and Secretary of the
State Board of Agriculture.*

General Agent.

P. M. HARWOOD.

ADDRESS, ROOM 136, STATE HOUSE, BOSTON.

The Commonwealth of Massachusetts.

REPORT.

In making this nineteenth annual report it may not be out of place to summarize somewhat the work of the Bureau since its establishment in 1891. Since 1892, when the first real work was done, 57,939 inspections have been made, an average of 3,218 annually, the average for the last two years being 6,981; 2,488 prosecutions have been made, averaging 132 per year; 2,320 convictions have been secured, an average of 128 per year. During the past seven years but 17 cases have been lost, or 2.4 per cent of the entire number prosecuted during that period, and only 20 defendants have been found violating any of the dairy laws a second time. A large majority of these prosecutions have been for violation of the oleomargarine laws. Meanwhile, the wholesale butter trade in Boston, according to Chamber of Commerce reports, has increased since 1900 at the rate of 1,850,154 pounds per year. There have been 545 meetings addressed upon dairy subjects, 280 of which have been since 1903. During these years there have been many demonstrations of the use of the Babcock milk tester, and on the points of the dairy cow; dairy tests have been conducted at fairs; inspections of creameries have been made; considerable dairy literature has been published, including during the past year an article on milk, its value as a food and its care in the home, prepared for translation into the Jewish and Italian languages, to be used among these people in Boston; also rules for the care of milk in the home, for posting. In all this work the welfare of the farmer and honest tradesman, as well as that of the consumer, has been constantly borne in mind.

During the year just closed there have been more total violations of the oleomargarine laws than for some years previous, but they have manifested themselves in different ways. The total number of all violations of laws prosecuted by the Dairy Bureau in 1909 was 206, all of which resulted in convictions. Of these, 5 were for watering milk, 33 for selling renovated butter in unmarked wrappers and 168 for violations of the oleomargarine laws, 121 of the latter being for violation of the oleomargarine restaurant law. This shows an attempt to increase consumption of the goods by taking chances in serving to guests in restaurants, boarding houses and hotels, without proper notice. The law distinctly states that notice shall be given to the guest that the substance so furnished is not butter. In some cases no attempt is made to give notice, and in others an attempt is made not to give notice by putting up a sign where no guest can see it, or by putting up a sign printed in such a way or upon such background that nobody sitting a short distance away can read it. Legally and morally such persons are just as guilty as those who make no attempt to give notice. Neither ignorance of the law nor such attempts at evasion are any defense.

It is true now, as it always has been, that oleomargarine should sail under its own colors, and be sold as and for what it is, entirely upon its own merits. The difference between the value and cost of oleomargarine and butter, and the close resemblance the former bears to the latter, make a temptation to sell and serve oleomargarine for butter so great that many yield to it. Last year we warned against the practice of watering milk. It seems that a warning against the practice of serving oleomargarine for butter in hotels, boarding houses and restaurants, without bona fide notice to guests, is now necessary.

In the educational work of the year we have especially urged that farmers weigh the milk of each cow, keep accurate accounts, raise more grain, buy less, study feeding rations, adopt practical, inexpensive methods of keeping cows clean, use covered milk pails with small openings in the top, and strain milk through sterilized cotton; that they thoroughly mix the milk of the herd before canning or

bottling, both for their own protection and for that of the consumer. We have also used our influence towards restoration of confidence in whole raw natural milk; have repeatedly pointed out its superiority as a food over prepared milks, and over many other foods; and have made suggestions as to its care and handling in the hands of the consumer.

We believe that the true condition of the Massachusetts dairyman is not fully appreciated, and that his greatest trouble is that he does not receive enough for his product. When we consider that on May 1, 1890, there were 200,658 cows assessed in Massachusetts, while on May 1, 1909, there were but 168,221, a decline of 32,437 in total, or 1,707 cows per year, and that there were more than 6,000,000 quarts less milk shipped into Boston in 1909 than was the case in 1906, we must conclude that there is something wrong with conditions, and we are of the opinion that a commission should be appointed to investigate and report upon the commercial milk situation. No one looking for truth can reasonably object to such investigation, honestly and impartially made by a competent and reliable Board. We believe this would do much to clear the atmosphere and restore confidence.

We recommend that a law be passed requiring that all milk not the straight, unmanipulated product of the cow be marked and sold for what it is.

We also recommend that a law be enacted making it unlawful to mix, for purposes of sale, any two or more of the following substances: raw whole milk, heated or pasteurized whole milk, skimmed milk, condensed milk, concentrated or evaporated milk, and water, — and making it unlawful for any person or corporation engaged in the sale of milk or cream, other than condensed, concentrated or other evaporated milk, to keep in his place of business condensed, concentrated or evaporated milk, except in an unopened can or receptacle; excepting, however, the preparation and sale of "modified milk," when sold as such, to be used for food for infants or invalids.

We also recommend that a law be enacted requiring that a label, bearing a formula for extending with water, for

home use, be securely attached to each container of evaporated, concentrated or condensed milk sold or offered for sale in this Commonwealth, and that the formula thus attached be such that the milk product resulting be not below the Massachusetts standard for whole milk. Such a law should carry with it a suitable penalty in case the milk thus extended fails in any instance to conform to present legal requirements for whole milk.

So long as a milk standard is maintained in this State it is manifestly unfair that these prepared milks from other States should come into our markets without either standard or guarantee as regards their solid food content.

Much has been done for the consumer in the last few years in the way of insuring to him a cleaner product. Is it not high time that he now join in doing something for the Massachusetts milk producer, in order that milk production be made reasonably remunerative, and that a fair share of the milk consumed continue to be produced in this State, under control of our own laws and regulations? Then let consumers and producers join hands, for their interests are mutual.

The personnel of the Bureau and its staff has remained practically unchanged; C. D. Richardson, chairman, H. E. Paige and W. C. Jewett, members, J. Lewis Ellsworth, secretary, P. M. Harwood, general agent, A. W. Lombard, agent, B. F. Davenport, M.D., and H. C. Emerson, M.D., chemists, with five other persons employed from time to time during the year.

The summary of the year's work is as follows: —

Total number of inspections,	1 6,872
Number of inspections where no sample was taken,	5,081
Number of samples of butter and oleomargarine, all purchased,	1,779
Number of samples of milk and cream,	90
Cases entered in court,	206
Meetings addressed by chairman of the Bureau,	2
Meetings addressed by Mr. Jewett,	3
Meetings addressed by the general agent,	18

¹ There were 78 extra samples taken during the year, therefore this number is 78 less than the sum of the next three items.

Cases prosecuted during the twelve months ending Nov. 30, 1909, by months and courts, with law violated, and results, are as follows:—

Court.	Month.	Number.	Law violated.	Convicted.	Discharged.
Shelburne Falls,	December,	1	Milk, . . .	1	—
Worcester, .	December,	1	Milk, . . .	1	—
Newton, . .	December,	9	7 oleomargarine, 2 renovated butter.	9	—
Waltham, . .	December,	2	Oleomargarine, .	2	—
New Bedford, .	December,	19	Oleomargarine, .	19	—
Franklin, . .	January, .	2	Renovated butter, .	2	—
Fall River, . .	January, .	3	2 oleomargarine, 1 renovated butter.	3	—
Uxbridge, . .	January, .	3	Renovated butter, .	3	—
Lowell, . . .	February, .	2	1 oleomargarine, 1 renovated butter.	2	—
North Adams, .	February, .	2	Oleomargarine, .	2	—
Pittsfield, . .	February, .	1	Oleomargarine, .	1	—
Northbridge, .	March, . .	1	Oleomargarine, .	1	—
Lawrence, . .	March, . .	7	5 oleomargarine, 2 renovated butter.	7	—
Worcester, . .	March, . .	21	9 oleomargarine, 12 renovated butter.	21	—
Marlborough, .	March, . .	1	Oleomargarine, .	1	—
Malden, . . .	March, . .	1	Renovated butter, .	1	—
Salem, . . .	April, . .	3	Oleomargarine, .	3	—
Gloucester, . .	April, . .	3	Renovated butter, .	3	—
Lynn, . . .	April, . .	7	Oleomargarine, .	7	—
Lynn, . . .	May, . . .	6	Oleomargarine, .	6	—
Springfield, .	May, . . .	3	Oleomargarine, .	3	—
Woburn, . . .	May, . . .	2	Oleomargarine, .	2	—
Fall River, . .	May, . . .	12	Oleomargarine, .	12	—

Court.	Month.	Num-ber.	Law violated.	Con-victed.	Dis-charged.
Newburyport, .	May, .	1	Oleomargarine, .	1	—
Malden, . .	May, .	2	Oleomargarine, .	2	—
Leominster, .	May, .	12	Oleomargarine, .	12	—
Fitchburg, .	May, .	4	Oleomargarine, .	4	—
Taunton, . .	June, .	2	Oleomargarine, .	2	—
Woburn, . .	July, .	1	Milk,	1	—
Newburyport, .	July, .	8	Oleomargarine, .	8	—
Worcester, . .	July, .	14	Oleomargarine, .	14	—
Quincy, . . .	August, .	2	Oleomargarine, .	2	—
Woburn, . . .	August, .	1	Milk,	1	—
Nahant, . . .	August, .	6	Oleomargarine, .	6	—
Hull,	August, .	2	Oleomargarine, .	2	—
New Bedford, .	September,	8	Oleomargarine, .	8	—
Springfield, .	September,	1	Milk,	1	—
Clinton, . . .	October, .	2	Renovated butter, .	2	—
Woburn, . . .	November,	2	Oleomargarine, .	2	—
Chelsea, . . .	November,	2	Oleomargarine, .	2	—
Fall River, . .	November,	11	Oleomargarine, .	11	—
Lowell, . . .	November,	11	9 oleomargarine, 2 renovated butter,	11	—
Amesbury, . .	November,	2	Renovated butter, .	2	—
Totals,		206	. . . . .	206	—

NOTE. — The Bureau is especially indebted to the milk inspectors of Boston, Lowell, Revere, Springfield, Taunton, Winchester and Worcester for assistance which has resulted in cases in court. We also record our indebtedness to all others who have aided us in any way.

The charges in the several cases entered in court for the year ending Nov. 30, 1909, have been as follows: —

Selling renovated butter in unmarked packages,	33
Selling oleomargarine without sign on exposed contents, . . .	3
Seling oleomargarine when butter was asked for,	29
Selling oleomargarine without being registered,	7
Selling oleomargarine without sign in store,	2
Selling oleomargarine in unmarked packages,	4
Furnishing oleomargarine in restaurants, etc., without notice to guests,	121
Selling oleomargarine containing foreign coloration,	2
Selling milk containing added water,	5
	206

The following is a list of inspections without samples and the number of samples taken in the years 1903–09, inclusive: —

YEAR.	Inspections without Samples.	Samples taken.
1903,	4,135	1,395
1904,	4,456	1,157
1905,	4,887	971
1906,	4,985	576
1907,	4,538	1,374
1908,	5,516	1,575
1909,	5,003	1,869
Totals,	33,520	8,917
Averages,	4,788	1,273

OLEOMARGARINE.

No licenses for the sale of colored oleomargarine were issued in this State, but two sales of such goods have been discovered by the Bureau during the year, and the parties promptly prosecuted.

The following figures show the oleomargarine output for the United States since 1902: —

Under Old Law.

	Pounds.
1902,	126,316,472

Under New Law.

1904,	48,071,480
1905,	49,880,982
1906,	53,146,657
1907,	68,988,850
1908,	79,107,273
1909,	90,621,844

It will be seen by the foregoing figures that the first effect of the present national oleomargarine law, which really forces the sale of oleomargarine upon its own merits, was to greatly reduce the output. In 1904 it reached its lowest point; since then there has been a gradual increase in the output, averaging about 8,000,000 pounds per year.

The number of United States oleomargarine retail licenses issued in this State is more than double that of one year ago, and this increase has occurred since Sept. 1, 1909.

The number of wholesale licenses remain the same as last year. The figures are as follows: —

Wholesale licenses in Boston,	13
Wholesale licenses in other cities,	8
	—
Total,	21
Retail licenses in Boston,	46
Retail licenses in other places,	465
	—
Total,	511

With over 500 different concerns selling oleomargarine in Massachusetts, a condition exists unlike anything in the past.

RENOVATED BUTTER.

The violations of the renovated butter law in this State have continued to decline, there having been but 33 such violations during the year. The high price of butter has caused more of the goods to be used than was the case in 1908, but it has been sold more carefully. There is one licensed concern in this State manufacturing renovated butter. A majority of the goods sold is in print form.

BUTTER.

The Chamber of Commerce figures show a decrease in consumption of butter for the first time since 1900, — the inevitable result of the high cost of living, including the high price of butter. Consumers are obliged to economize; therefore less butter is used, and to some extent at least this is being made up by the use of oleomargarine, exact figures for the local sale of which are unobtainable. The wholesale price of butter has ruled 2 cents per pound higher than in 1908, and nearly 9 cents higher than in 1904. The creamery at Shelburne Falls has passed into the hands of H. P. Hood & Sons, and the Williamsburg and a few other creameries have gone out of business.

The amount of consumption of butter for 1908 was 66,869,455 pounds; that of 1909, 65,939,692 pounds, — a decrease of 929,763 pounds. In 1900 the consumption was but 49,288,306 pounds. Therefore the average increase of consumption has been 1,850,154 pounds per year for the last nine years, — a grand record.

The following table shows the average quotation for the best fresh creamery butter, in a strictly wholesale way, in the Boston market for the last nine years, as compiled by the Boston Chamber of Commerce: —

MONTH.	1909. Cents.	1908. Cents.	1907. Cents.	1906. Cents.	1905. Cents.	1904. Cents.	1903. Cents.	1902. Cents.	1901. Cents.
January, . . .	30.9	29.7	30.4	25.2	28.0	22.7	28.0	25.0	25.0
February, . . .	30.0	32.1	31.7	25.2	31.6	24.6	27.0	28.5	25.0
March, . . .	29.1	30.2	30.2	25.5	28.0	24.1	27.0	29.0	23.0
April, . . .	27.9	28.4	32.2	22.2	29.1	21.6	27.5	32.0	22.0
May, . . .	26.6	24.1	31.4	19.9	23.9	19.9	22.5	25.0	19.5
June, . . .	26.4	24.5	24.3	20.2	20.7	18.4	22.75	23.5	20.0
July, . . .	27.2	23.6	25.9	21.0	20.6	18.3	20.5	22.5	20.0
August, . . .	28.2	24.5	26.0	23.8	21.6	19.1	20.0	21.5	21.0
September, . . .	31.3	25.3	29.2	25.6	21.2	20.8	22.0	23.5	22.0
October, . . .	31.7	27.5	29.9	26.9	22.1	21.5	22.5	24.5	21.5
November, . . .	31.4	29.5	27.1	27.6	23.0	24.1	23.5	27.0	24.0
December, . . .	32.9	31.0	27.5	30.7	23.9	25.7	24.5	28.5	24.5
Averages, . . .	29.5	27.5	28.48	24.48	24.47	21.73	26.23	25.0	22.3

The Chamber of Commerce figures regarding the butter business in Boston for 1908 and 1909 are as follows:—

	1909. Pounds.	1908. Pounds.
Carried over,	8,960,328	6,854,760
Receipts for January,	3,918,459	2,875,253
Receipts for February,	2,258,740	2,529,472
Receipts for March,	2,762,898	3,182,045
Receipts for April,	3,089,744	3,570,013
Receipts for May,	4,810,649	6,123,261
Receipts for June,	11,309,791	11,675,687
Receipts for July,	11,357,950	11,534,423
Receipts for August,	8,648,239	8,800,812
Receipts for September,	7,406,408	8,990,275
Receipts for October,	5,140,375	4,707,422
Receipts for November,	2,813,504	2,268,606
Receipts for December,	2,257,397	3,585,918
Total supply,	74,014,482	76,697,947
Exports for year, deduct,	44,050	868,164
Net supply,	73,970,432	75,829,783
Storage stock December 31, deduct,	8,030,740	8,960,328
Consumption for year,	65,939,692	66,869,455

MILK.

We are glad to note some apparent increase in the consumption of raw whole milk in Boston. During the years 1907 and 1908 there was a decided falling off. In carred milk alone this amounted to 10,402,697 $\frac{1}{2}$ quarts; but a turn has been made, and 4,351,657 $\frac{1}{2}$ quarts more were shipped in during 1909 than was the case in 1908, but it is still 6,151,040 quarts behind where it was three years ago, and this in the face of a constantly increasing population.

We are also glad to note a slight increase in the price paid the farmers by the Boston contractors, brought about by extending the winter price over eight months instead of six, as formerly. The average price now paid in the 9-cent zone is still below 4 cents a quart. Milk production cannot be placed on a satisfactory footing in Massachusetts until at least 5 cents per quart is the average price paid the farmer throughout the year. A creditable move has been made by some of the contractors in offering an increased price for milk made under specially sanitary conditions. This is manifestly a help to those consumers who can afford to pay for such milk, as well as to the farmers, who care to take the necessary pains to produce it.

The amount of certified milk sold in the State is very limited indeed, owing to its high cost to the consumer and to the extreme requirements in its production.

It is reported that the sales of cream are falling off as the result of the high cost of living; this is natural, as cream is something of a luxury compared with whole milk. We regret that there are no figures available giving the exact amount of this decrease.

Appended Tables.

Tables I. and II. show instances where prosecutions might have been made under the milk standard law had not the samples of milk of known purity indicated that the original samples were of pure milk. Notified of this fact the owners of the herds withdrew their milk from market.

Table III. shows a case where the producer was liable to criminal prosecution under the milk standard law, but the health authorities forbade further sale of this milk on account of the poor condition of the cows.

Tables IV., V. and VI. show analyses where parties were prosecuted under the milk adulteration law, without resort to the milk-of-known-purity method for comparison.

Tables VII. and VIII. show cases where the samples of milk of known purity for comparison helped in prosecutions and convictions under the milk adulteration law.

Table IX. shows analyses upon which prosecutions of 1909 were based.

Table X. shows the number of cows assessed in Massachusetts in 1890, 1906 and 1909, with decrease and averages.

Table XI. shows the amount of milk brought into Boston by railroad in the fiscal years of 1906, 1907, 1908 and 1909.

TABLE I. — *Analysis of Milk taken from Possession of a Farmer in Worcester County, ready for Delivery to a Worcester Peddler.*

SAMPLE NO.	Mark on Can.	Fat.	Solids not Fat.	Total Solids.	Refraction.
1,	K ¹	3.20	8.50	11.70	-
2,	K ¹	3.30	8.52	11.82	40.7
3,	K ¹	2.90	7.78	10.68	38.8
4,	K	2.80	7.70	10.50	39.2
5,	K	3.50	8.78	12.28	-
6,	K	2.90	8.24	11.14	40.6
7,	K	8.30	8.38	11.68	-
8,	K ¹	3.00	8.70	11.70	41.4

¹ Night's milk.

NOTE. — This milk being manifestly pure milk, samples of known purity were subsequently taken from the herd.

Analysis of Samples of Night's Milk of Known Purity taken from the Herd producing the Milk, Analysis of which is given in Above Table.

Cow No.	Breed.	Fat.	Other Milk Solids.	Total Solids.	Refraction.
1	Holstein,	3.00	7.24	10.24	38.6
2	Holstein,	3.40	7.70	11.10	38.1
3	Holstein,	2.70	7.58	10.28	39.2
4	Holstein,	3.20	8.40	11.60	-
5	Holstein,	3.10	8.20	11.30	40.5
6	Holstein,	3.50	8.20	11.70	-
7	Holstein,	2.60	8.06	10.66	39.5
8	Holstein,	3.40	8.42	11.82	-

This producer withdrew his milk from the market.

TABLE II. — *Analyses of Samples of Milk taken in Revere, April 26, from Five Cans of Milk ready for Delivery to Lynn Peddler.*

SAMPLE No.	Fat.	Solids not Fat.	Total Milk Solids.	Refraction.
1,	4.0	7.96	11.96	40.5
2,	3.0	7.44	10.44	39.1
3,	3.6	8.56	12.16	42.2
4,	3.2	8.58	11.78	42.6
5,	3.3	8.64	11.94	42.6

Analyses of Samples of Night's Milk of Known Purity taken from Herd producing Above-mentioned Milk.

Cow No.	Breed.	Estimated Amount Milk (Quarts).	Fat.	Solids not Fat.	Total Milk Solids.	Refraction.
1	Grade, Holstein, black and white.	3	3.4	8.48	11.88	42.2
2	Grade, Holstein, black and white.	5	3.0	8.10	11.10	41.4
3	Grade, Holstein, black and white.	4	3.5	7.94	11.44	40.5
4	Grade, Holstein, black,	5	3.3	8.20	11.50	41.6
5	Grade, Holstein, black and white.	5	2.9	7.74	10.64	40.4

NOTE. — Advice was given as to how to bring the milk of this herd up to standard, but the owner withdrew the milk from the market and sold the herd.

TABLE III. — *Analysis of Milk taken from Possession of Producer in Marblehead, ready for Delivery to a Salem Peddler, April, 1909.*

SAMPLE No.	Fat.	Solids not Fat.	Total Milk Solids.	Refraction.
1,	4.55	8.41	12.96	39.5
2,	2.75	8.25	11.00	40.0

NOTE. — Sample No. 1 was taken from a full 8-quart can and Sample No. 2 from an 8-quart can containing about 4 quarts of milk. It is evident that in the attempt to mix the milk the top of can No. 2 was turned into can No. 1, thus making the contents of No. 1 above and of No. 2 below the average quality of the herd's milk.

Analysis of Milk of Known Purity taken from Herd of Above-mentioned Producer, April, 1909 (Night's Milk).

Cow No.	Breed.	Estimated Amount Milk (Quarts).	Fat.	Solids not Fat.	Total Milk Solids.	Refraction.
10	Grade, Ayrshire, . .	2	3.20	7.70	10.90	39.0
11	Grade, Ayrshire, . .	1	3.30	8.84	12.14	42.3
12	Grade, Holstein, . .	2	3.30	8.78	11.08	41.0
13	Grade, Ayrshire-Holstein,	1	3.40	8.06	11.46	40.5

NOTE. — The above-mentioned animals were in extremely poor condition, and the milk was thereafter excluded from the Salem market.

TABLE IV. — *Analyses of Two Samples of Milk taken in Colrain, November, 1908, as it was about to be sent to a Creamery.*

SAMPLE No.	Fat.	Other Milk Solids.	Total Milk Solids.	Refraction.
1,	2.80	6.80	9.60	34.5
2,	3.60	8.46	12.06	41.0

NOTE. — There being no question but that Sample No. 1 contained added water, the defendant was summoned into court, pleaded guilty, and was fined \$50, which he paid.

TABLE V. — *Analyses of Samples of Milk taken at a Dairy in East Longmeadow just before Delivery to a Springfield Peddler, August, 1909.*

SAMPLE NO.	Fat.	Solids not Fat.	Total Milk Solids.	Refraction.
1,	2.70	4.97	7.67	30.30
2,	1.30	2.98	4.28	24.45
3,	2.55	4.87	7.42	29.80

NOTE. — This milk was manifestly watered, and the party was summoned into court without further ado. The circumstances were out of the ordinary. The milk was being furnished to a hospital in Springfield, where the discovery was made that something was wrong. Investigation showed that the milk had been adulterated before it left the farm, by a boy who, having been scolded for allowing the cows to shrink in their milk flow, had watered the milk for the sole purpose of making good with his parents. He evidently little thought of the far-reaching consequences of his act. He knows better now.

TABLE VI. — *Analyses of Seven Samples of Milk taken in Wilmington just before being delivered to a Woburn Peddler.*

SAMPLE NO.	Fat.	Solids not Fat.	Total Milk Solids.	Refraction.
1,	3.2	7.66	10.86	38.9
2,	3.6	7.50	11.10	37.9
3,	3.6	7.50	11.10	38.7
4,	2.5	7.22	9.72	38.4
5,	2.9	6.70	9.60	36.4
6,	3.4	7.12	10.52	37.4
7,	3.7	7.22	10.92	37.4

NOTE. — The above shows that water was put into all the cans. The milk was not mixed before canning. The party when summoned into court pleaded nolo, was found guilty, and fined \$50, which he paid.

TABLE VII. — *Analyses of Two Samples of Night's Milk taken from the Possession of a Woburn Producer, on Aug. 3, 1909, as it was ready for Delivery to a Winchester Peddler.*

SAMPLE No.	Fat.	Solids not Fat.	Total Milk Solids.	Refraction.
1,	3.00	7.30	10.30	38.50
2,	3.10	7.60	10.70	38.00

Analyses of Samples of Night's Milk of Known Purity taken from the Herd producing the Above-mentioned Milk.

Cow No.	Breed.	Estimated Amount Milk (Quarts).	Fat.	Solids not Fat.	Total Solids.	Refraction.
1	Brindle,	4½	4.1	9.7	13.8	41.2
2	Roan,	7¼	3.4	8.7	12.1	40.7

NOTE. — The result of this investigation was to assure the prosecuting officer of his ground, and a complaint was made against this farmer for having in his possession, with intent to sell, milk to which water had been added. He was tried, found guilty, and fined \$50, which he paid.

TABLE VIII. — *Analysis of Milk obtained from a Worcester County Producer, ready for Delivery to a Worcester Peddler, November, 1908.*

SAMPLE No.	Mark on can.	Fat.	Solids not Fat.	Total Solids.	Refraction.
1,	7 ¹	3.8	7.72	11.52	38.3
2,	7 ¹	4.0	7.80	11.80	38.9
3,	7 ¹	4.0	8.26	12.26	39.6
4,	No mark	4.2	7.96	12.16	38.6
5,	No mark	4.2	7.98	12.18	38.9

¹ Night's milk.

NOTE. — After taking the above samples, milk from this herd dropped from 5 cans per day to 4 cans. This milk was said by the owner to have been mixed, therefore the analysis indicates that varying amounts of water were added to the milk in the different cans. He afterwards pleaded guilty to having in his possession milk to which water had been added, and paid a fine of \$50.

*Analyses of Samples of Night's Milk of Known Purity from the
Herd of the Same Producer.*

Cow No.	Breed.	Estimated Amount Milk (Quarts).	Fat.	Solids not Fat.	Total Solids.	Refrac- tion.
1, . .	Holstein and Jersey, .	2	3.80	9.16	12.96	-
2, . .	Holstein and Jersey, .	2	4.50	9.20	13.70	-
3, . .	Grade Ayrshire, . .	5	3.40	8.20	11.60	41.1
4, . .	Holstein,	3	4.20	8.50	12.70	40.9
5, . .	Holstein and Jersey, .	2	4.70	8.40	13.10	40.7
7, . .	Holstein and Jersey, .	2	4.40	9.34	13.74	-
8, . .	Holstein and Jersey, .	2	6.20	9.70	15.90	-
11, . .	Holstein and Galway, .	2	3.60	8.54	12.14	-
Mixed milk,		-	4.20	8.80	13.00	41.2

TABLE IX.—*Milk Analyses upon which were based the Prosecu-
tions of 1909.*

CASE NO.	Fat.	Other Milk Solids.	Total Solids.	Refrac- tion.	Remarks.
1, . . .	2.80	6.80	9.60	34.50	Contained added water.
2, . . .	4.20	7.96	12.16	38.60	Contained added water.
3, . . .	2.90	6.70	9.60	36.40	Contained added water.
4, . . .	3.00	7.30	10.30	38.50	Contained added water.
5, . . .	1.30	2.98	4.28	24.45	Contained added water.

TABLE X.—*Number of Cows assessed in Massachusetts, 1890,
1906 and 1909.*

Number of cows assessed May 1, 1890,	. . . .	200,658
Number of cows assessed May 1, 1909,	. . . .	168,221
Decrease (nineteen years),	. . . . .	32,437
Average annual decrease,	. . . . .	1,707
Number of cows assessed May 1, 1906,	. . . .	181,816
Number of cows assessed May 1, 1909,	. . . .	168,221
Decrease (three years),	. . . . .	13,595
Average annual decrease,	. . . . .	4,531

TABLE XI.—*Showing Milk brought into Boston by Railroad, 1905-09.*

	Quarts.	Quarts.
December, 1905, to December, 1906,	114,233,976	—
December, 1906, to December, 1907,	109,882,190 ¹ / ₂	4,351,785 ¹ / ₂ ¹
December, 1907, to December, 1908,	103,381,278 ¹ / ₂	6,050,912 ¹
Total decrease, two years,		10,402,697 ¹ / ₂ ¹
December, 1908, to December, 1909,	108,082,936	4,251,657 ¹ / ₂ ²
Net decrease since 1906,		6,151,040 ¹

CREAMERIES, MILK DEPOTS, ETC.

Appended we give a revised list of the principal creameries, milk depots, etc., owned and operated by Massachusetts individuals and corporations.

Co-operative Creameries.

LOCATION.	Name.	Superintendent or Manager.
1. Ashfield, . . .	Ashfield Creamery, . . .	William Hunter, manager.
2. Belchertown, . . .	Belchertown Creamery, . . .	M. G. Ward, president.
3. Cheshire (P. O. Adams).	Greylock Creamery, . . .	C. J. Fales, president.
4. Cummington, . . .	Cummington Creamery, . . .	W. E. Patridge, superintendent.
5. Easthampton, . . .	Hampton Creamery, . . .	W. H. Wright, treasurer.
6. Egremont (P. O. Great Barrington).	Egremont Creamery, . . .	E. A. Tyrrell, manager.
7. Monterey, . . .	Berkshire Hills Creamery, . . .	F. A. Campbell, manager.
8. New Boston, . . .	Berkshire Creamery, . . .	F. M. Rugg, president.
9. New Salem (P. O. Millington).	New Salem Creamery, . . .	W. A. Moore, treasurer.
10. Northfield, . . .	Northfield Creamery, . . .	Chas. C. Stearns, superintendent.
11. Shelburn, . . .	Shelburne Creamery, . . .	Ira Barnard, manager.
12. Westfield (P. O. Wyben).	Wyben Springs Creamery, . . .	C. H. Kelso, manager.
13. West Newbury, . . .	West Newbury Creamery, . . .	R. S. Brown, treasurer.

¹ Decrease.² Increase.

Proprietary Creameries.

LOCATION.	Name.	Owner or Manager.
1. Amherst, . . .	Amherst Creamery, . . .	W. A. Pease.
2. Amherst, . . .	Fort River Creamery, . . .	E. A. King.
3. Brimfield, . . .	Crystal Brook Creamery, . . .	F. N. Lawrence.
4. Everett, . . .	Hampden Creamery Com- pany.	Hampden Creamery Com- pany.
5. Fitchburg, 26 Cushing Street.	Fitchburg Creamery, . . .	G. S. Learned.
6. Gardner, . . .	Boston Dairy Company, . . .	Boston Dairy Company.
7. Groton, . . .	Lawrence Creamery, . . .	Myron P. Swallow.
8. Heath, . . .	Cold Spring Creamery, . . .	I. W. Stetson & Son.
9. Hinsdale, . . .	Hinsdale Creamery, . . .	Ashley B. Clark, treasurer.
10. Marlborough, . . .	Este's Creamery, . . .	F. F. Este.
11. North Brookfield, . . .	North Brookfield Creamery, . . .	H. A. Richardson.
12. Shelburne Falls, . . .	Shelburne Falls Creamery, . . .	H. P. Hood & Sons.

Educational.

Amherst,	Dairy Industry Course, Massachusetts Agricultural College.	W. P. B. Lockwood, profes- sor in charge.
------------------	---	--

Milk-distributing Depots.

NAME.	Location.	Manager.
Alden Bros., . . .	Boston, office 1171 Tremont Street, depot 28 Duncan Street.	Charles L. Alden.
Boston Dairy Company,	Boston, 484 Rutherford Avenue, . . .	W. A. Grostein.
Elm Farm Milk Company,	Boston, Wales Place,	James H. Knapp.
H. P. Hood & Sons, . . .	Boston, 494 Rutherford Avenue, Branch, 24 Anson Street, Forest Hills. Lynn, 193 Alley Street. Malden, 425 Main Street. Salem, 252 Bridge Street. Watertown, 289 Pleasant Street. Lawrence, 629 Common Street.	Charles H. Hood.
D. Whiting & Sons, . . .	Boston, 570 Rutherford Avenue, . . .	George Whiting.
C. Brigham Company, . .	Cambridge, 158 Massachusetts Avenue.	John K. Whiting.
Deerfoot Farms, . . .	Southborough,	S. H. Howes.
Springfield Co-operative Milk Association.	Springfield,	F. B. Allen.
Tait Bros.,	Springfield,	Tait Bros.
Wachusett Creamery, . .	Worcester,	E. H. Thayer & Co.
C. Brigham Company, . .	Worcester, 9 Howard Street, . . .	C. Brigham Com- pany.

*Milk-distributing Depots — Concluded.**Milk Laboratory.*

Walker-Gordon Laboratory.	Boston, 793 Boylston Street.	George W. Franklin.
---------------------------	------------------------------	---------------------

Receiving Depots for Milk for Shipments to New York City.

F. D. Shove Milk Factory,	West Stockbridge,	C. M. Riggs.
Willow Brook Dairy Company.	Sheffield,	George Patterson.

EXPENSES.

The following is a classified statement of the expenses for the year ending Nov. 30, 1909:—

Bureau: compensation and traveling expenses,	\$322 43
Agents: compensation,	2,506 90
Agents: traveling expenses and samples purchased,	2,748 97
General agent: traveling and necessary expenses,	436 80
Chemists: analyses, tests, court attendance,	1,659 00
Printing and supplies,	192 31
Educational,	133 59
Total,	\$8,000 00

P. M. HARWOOD,

General Agent.

Accepted and adopted as the report of the Dairy Bureau.

CARLTON D. RICHARDSON.
HENRY E. PAIGE.
W. C. JEWETT.

TWENTIETH ANNUAL REPORT

OF THE

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 14, 1911.



BOSTON:
WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
18 POST OFFICE SQUARE.
1911.

TWENTIETH ANNUAL REPORT

OF THE

Mass!

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 14, 1911.



BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
18 POST OFFICE SQUARE.
1911.

APPROVED BY
THE STATE BOARD OF PUBLICATION.

614.32M3

D132

1910

B

DAIRY BUREAU—1910.

CHARLES M. GARDNER, WESTFIELD, *Chairman.*

HOWARD A. PARSONS, NORTH AMHERST.

GEORGE W. TRULL, TEWKSBURY, P. O. LOWELL, R. F. D.

Secretary.

J. LEWIS ELLSWORTH, *Executive Officer and Secretary of the
State Board of Agriculture.*

General Agent.

P. M. HARWOOD.

ADDRESS, ROOM 136, STATE HOUSE, BOSTON.

The Commonwealth of Massachusetts.

REPORT OF THE DAIRY BUREAU.

During the year just closed 7,922 inspections have been made, 220 cases entered in court, of which 218 were won, and 35 meetings have been addressed by the general agent. Of the court cases, 139 were for violation of the oleomargarine laws, 77 for violation of the renovated butter law, and 4 for violation of the milk adulteration law. The Bureau has inspected most of the creameries and large milk-distributing depots in the State, and has found them, as a rule, in a satisfactory condition. There are now 12 co-operative and 11 proprietary creameries in the State. Two creameries, that in Shelburne Falls and the Greylock in Cheshire, have gone out of business within the year.

While the Bureau has done much in the way of protecting the public from fraud and the makers and dealers in butter from unfair competition, and while more than the usual amount of educational work has been done, but little milk work has been attempted, and this for two reasons. First, our appropriation is insufficient, and second, the field is well covered by another State department and by local milk inspectors, now generally active all over the Commonwealth. The few cases we have undertaken have been upon request.

THE DAIRY SITUATION.

In view of the present transportation situation and the fact that approximately three-fourths of all the milk brought into Boston by rail and nearly all of that brought in from without the State is now pasteurized before being offered for sale, the hope of the Massachusetts farmer seems to lie in whatever demand there is for a good clean article of

near-by raw milk, produced under conditions which inspire confidence and therefore demand a better price than that received for milk which cannot be safely sold without resorting to pasteurization.

As an illustration of what can be done where there is a good understanding between reasonable local authorities and willing-to-co-operate milk producers, the city of Brockton stands out prominently, milk being generally sold in that city this winter at 9 cents per quart. In the report of the milk inspector of Brockton for 1909 he cites 25 dairies with bacteria count averaging below 50,000 per cubic centimeter, of which 18 averaged below 25,000 and 7 below 10,000 each. In commenting on the 3 dairies having the lowest bacteria count, the inspector says: "Neither of these has found it necessary to generally remodel the barn or install costly new apparatus, but careful personal supervision of the work by the owner has placed these dairies in the lead." Other good illustrations might be given in other cities, but this one suffices to show that where there is a will to produce a clean article of milk there is a way; and also illustrates a willingness on the part of the public, confidence established, to pay the price.

The number of cows assessed in Massachusetts April 1, 1910, was 166,048, which is 2,173 less than were assessed in 1909 and 15,763 less than were assessed in 1906, the average annual decline for the last four years being 3,942. The amount of milk brought into Boston by rail has also continued to fall off, according to the Railroad Commissioners' figures. For twelve months, Dec. 1, 1908, to Nov. 30, 1909, the figures were 108,082,936 quarts; for corresponding months in 1909-10, 100,606,362½, — a decrease of 7,376,573½ quarts. The corresponding months in 1905-06 showed 114,233,976 quarts. On this basis of 114,000,000 quarts in 1906, a normal increase with the growth of population ought to have shown 123,000,000 quarts of fluid milk brought into Boston by rail in 1910.

CONDENSED MILK.

There is little doubt but that condensed milk, in whatsoever form it appears, has recently made serious inroads upon the milk trade in this Commonwealth. Not only is this true of Boston and other cities, but there is hardly a hamlet so small or so remotely situated that the little cans of this article have not found their way to the shelves of the grocery store or the meat market. Yet with a possible exception not a can of this milk is produced or condensed in Massachusetts. The local storekeeper thus sends his money out of the State for condensed milk, while at the same time he complains if the local farmer buys dry goods or groceries outside his own town. When the consumer buys condensed milk instead of clean, fresh milk produced by local dairymen, because he is loath to pay the latter a living price, does he know whether or not he is paying a greater relative price for condensed milk and at the same time getting a relatively inferior article? If not, he should post himself as to the facts. Condensed milk has its use, a niche to fill, namely, wherever fresh fluid milk cannot for any reason be obtained or kept in proper condition; but until this milk can be offered for sale at less price than it now is, or can be proven to be more nutritious as a food than an equal value of clean, raw, whole milk, there is little excuse for either its purchase or use wherever the latter is obtainable at present prices. We have found, from the purchase and analysis of a number of samples of condensed milks, facts similar to those discovered by Professor Jordan, and reported by him last year, that the average cost was around 11 cents per fluid quart equivalent for condensed milk on the basis of the Massachusetts standard of 3.35 per cent milk fat. In this connection it should be remembered that ordinary fluid milk averages a higher percentage of fat than that required by law, thus rendering the comparison more than fair to condensed milk. Professor Jordan also reported that condensed milk varied greatly in its bacteria count, all the way from "very low" to 10,000,000 per cubic centimeter. Our own investigation of sixteen brands purchased at random showed,

through Professor Prescott's examination, variation of from less than 100 to 1,350,000 per cubic centimeter. It therefore appears that condensed milk is not always sterile.¹ Examinations made by our chemist, B. F. Davenport, M.D., by Herman C. Lythgoe, analyst of the State Board of Health, and by Prof. James O. Jordan of the Boston Bureau of Milk Inspection, indicate that condensed milk is seldom prepared from milk rich in fat, but oftentimes from apparently below-standard milk. Therefore it would seem that the least we can ask is the passage by the Legislature of a bill requiring that a label, bearing a formula for extending with water, for home use, be securely attached to each container of evaporated, concentrated or condensed milk sold or offered for sale in this Commonwealth, and that the formula thus attached be such that the milk product resulting be not below the Massachusetts standard for whole milk. Such a law should carry with it a suitable penalty in case the milk thus extended fails in any instance to conform to the present legal requirements for whole milk.

So long as a milk standard is maintained in this State it is manifestly unfair that these prepared milks from other States should come into our markets without either standard or guarantee as regards their solid food content. We suggest the following, which is the same bill that the Bureau used its best efforts to have passed last year:—

AN ACT RELATIVE TO THE LABELING OF EVAPORATED, CONCENTRATED
OR CONDENSED MILK.

SECTION 1. Every container of evaporated, concentrated or condensed milk sold or offered for sale, or had in possession or custody with intent to sell, by any person, firm or corporation within this commonwealth, shall have plainly printed thereupon in the English language, or attached thereto on some firmly affixed tag or label, a formula for extending the said evaporated, concentrated or condensed milk with water, and the said formula must be such that the milk product resulting shall not be below the Massachusetts standard for milk solids and fat for whole milk.

SECTION 2. Whoever, himself or by his servant or agent or as

¹ It should be said, in justice to evaporated unsweetened milk, that it is usually found to be practically sterile, and is also sold at a relatively less price than the sweetened condensed milk.

the servant or agent of any person, firm or corporation, sells, exchanges or delivers, or has in his custody or possession with intent to sell, exchange or deliver, any container of evaporated, concentrated or condensed milk, within this commonwealth, not marked or labeled in compliance with the provisions of section one of this act, shall for the first offence be punished by a fine of not more than one hundred dollars, for a second offence by a fine of not less than one hundred nor more than two hundred dollars, and for a subsequent offence by a fine of five hundred dollars or by imprisonment for not less than three months nor more than six months.

SECTION 3. This act shall take effect on the first day of September in the year nineteen hundred and eleven.

OLEOMARGARINE FROM NATIONAL STANDPOINT.

The total amount of uncolored oleomargarine withdrawn United States tax paid in year ending June 30, 1910, that is, what was sold in this country, was 135,149,429 pounds, or 97 per cent of the whole, and the tax at $\frac{1}{4}$ cent per pound amounted to \$337,898.57. If, as is now proposed, 2 cents per pound had been paid as tax on this same amount the revenue would have increased sevenfold, and would have amounted to \$2,703,188.58. In view of this fact we are constrained to ask three questions. First, does the consumer want to pay this increased tax? Second, does the consumer want his oleomargarine colored to more closely imitate creamery butter, thus increasing the chance of his being more readily imposed upon by being required to pay an approximate creamery price for it? Third, why does the oleomargarine manufacturer wish to re-establish a system which was really responsible for the necessity for laws to protect the consumer from fraud from the outset? This question of taxing oleomargarine and thus restricting the use of coloring matter in its manufacture is of vital importance to producers, dealers and consumers; therefore all should be alive to the situation, and see to it that no ill-advised legislation takes place in our national Congress.

CO-OPERATION.

This Bureau has on several occasions in the past advocated a State dairymen's association, and we believe that such an organization, properly officered and managed, would work

out for the benefit of the Massachusetts milk-producing farmers, and, indirectly, for the consuming public as well.

PERSONNEL OF THE BUREAU.

In January, 1910, Messrs. Richardson, Paige and Jewett, by reason of expiration of their terms, ceased to be members of the Board of Agriculture, and therefore were ineligible for reappointment on the Bureau. His Excellency Governor Draper was, therefore, called upon, for the first time since its original organization, to select an entirely new Bureau, which he did, appointing Charles M. Gardner of Westfield, Howard A. Parsons of Amherst and George W. Trull of Tewksbury. The executive force, agents, chemists, etc., are as follows: executive officer and secretary, J. Lewis Ellsworth; general agent, P. M. Harwood; B. F. Davenport, M.D., of Boston, and F. W. Farrell of the Emerson Laboratory, Springfield, have done the chemical work. A small amount of bacteriological work has been done by Prof. Samuel C. Prescott of Boston. A. W. Lombard has continued to act as agent, and five others have been temporarily employed from time to time.

SUMMARY OF POLICE WORK.

Total number of inspections,	17,922
Number of inspections where no sample was taken,	6,121
Number of samples of butter and oleomargarine, all purchased, .	1,724
Number of samples of milk and cream,	136
Cases entered in court,	220
Meetings addressed by the general agent,	35

Cases prosecuted during the twelve months ending Nov. 30, 1910, by months and courts, with law violated, and results, are as follows:—

¹ There were 53 extra samples taken during the year, therefore this number is 53 less than the sum of the next three items.

COURT.	Month.	Num- ber.	Law violated.	Con- victed.	Dis- charged.
Holyoke, Police, . . .	December, .	16	Oleomargarine, .	16	-
Somerville, Police, . . .	December, .	2	Oleomargarine, .	2	-
Brockton, Police, . . .	December, .	5	4 oleomargarine, 1 milk, . . .	5	-
Worcester, Central District,	December, .	1	Milk, . . .	-	1
Springfield, Police, . . .	December, .	1	Milk, . . .	1	-
Cambridge, Third Eastern Middlesex District.	December, .	8	6 renovated butter, 2 oleomargarine.	8	-
Lowell, Police, ¹ . . .	December, .	3	Oleomargarine, .	3	-
Lynn, Police, . . .	December, .	4	Oleomargarine, .	4	-
Cambridge, Third Eastern Middlesex District.	January, .	2	Oleomargarine, .	2	-
Haverhill, Northern Essex District.	January, .	2	Renovated butter,	2	-
Holyoke, Police, . . .	January, .	4	Renovated butter,	4	-
New Bedford, Third Bristol District.	January, .	12	Oleomargarine, .	12	-
East Boston, District, ² .	January, .	4	Renovated butter,	4	-
Ayer, Northern Middlesex District.	January, .	2	Renovated butter,	2	-
Northampton, Hampshire District.	February, .	1	Oleomargarine, .	1	-
North Adams, Northern Berkshire District.	February, .	2	Renovated butter,	2	-
Worcester, Central Worces- ter District.	February, .	35	9 renovated butter, 26 oleomargarine.	35	-
Fitchburg, Police, . . .	March, .	4	Oleomargarine, .	4	-
Fall River, Second Bristol District.	March, .	26	16 renovated butter, 10 oleomargarine.	26	-
Quincy, East Norfolk Dis- trict.	March, .	1	Renovated butter,	1	-
Orange, Eastern Franklin District.	March, .	4	Oleomargarine, .	4	-
Attol, First Northern Worcester District.	March, .	2	Oleomargarine, .	2	-
Gardner, First Northern Worcester District.	March, .	2	Renovated butter,	2	-
Holyoke, Police, . . .	April, .	10	2 renovated butter, 8 oleomargarine.	10	-
Lawrence, Police, . . .	April, .	6	Renovated butter,	6	-
Salem, First Essex District,	April, .	1	Renovated butter,	1	-
Gloucester, Eastern Essex District.	April, .	4	Oleomargarine, .	4	-
Worcester Central District,	April, .	2	Oleomargarine, .	2	-
Lynn Police, . . .	May, .	18	Renovated butter,	18	-
Chicopee, Police, . . .	May, .	1	Oleomargarine, .	1	-
Southbridge, First Southern Worcester District.	May, .	2	Oleomargarine, .	2	-
Chelsea, Police, . . .	May, .	2	Oleomargarine, .	2	-
Taunton, First Bristol Dis- trict.	May, .	1	Oleomargarine, .	-	1
Springfield, Police, . . .	June, .	2	Oleomargarine, .	2	-
Marlborough, Police, . . .	June, .	2	Oleomargarine, .	2	-
Fall River, Second Bristol District.	June, .	2	Oleomargarine, .	2	-
Boston, Municipal, ² . . .	June, .	2	Renovated butter,	2	-

¹ Filed on payment of costs.² In connection with the Boston Bureau of Milk Inspection.

Court.	Month.	Num-ber.	Law violated.	Con-victed.	Dis-charged.
Concord, Central Middlesex District.	June, . .	2	Renovated butter,	2	-
Northampton, Hampshire District.	June, . .	2	Oleomargarine, .	2	-
Woburn, Fourth Eastern Middlesex District.	July, . .	2	Oleomargarine, .	2	-
Fall River, Second Bristol District.	July, . .	2	Oleomargarine, .	2	-
Wareham, Fourth Plymouth District.	July, . .	2	Oleomargarine, .	2	-
Nahant, Police, . . .	August, .	2	Oleomargarine, .	2	-
Oak Bluffs, Dukes County District.	September, .	2	Oleomargarine, .	2	-
Salem, First Essex District,	September, .	1	Milk,	1	-
Salem, First Essex District,	November, .	3	Oleomargarine, .	3	-
Concord, Central Middlesex District.	November, .	2	Oleomargarine, .	2	-
Woburn, Fourth Eastern Middlesex District.	November, .	2	Oleomargarine, .	2	-
Totals,		220		218	2

NOTE. — The Bureau is especially indebted to the milk inspectors of Boston, Chicopee, Lowell, Northampton, Revere, Salem, Springfield, Taunton and Worcester for assistance which has resulted in cases in court. We also record our indebtedness to all others who have aided us in any way.

The charges in the several cases entered in court for the year ending Nov. 30, 1910, have been as follows:—

Selling renovated butter in unmarked packages,	77
Selling oleomargarine when butter was asked for,	35
Selling oleomargarine without being registered,	4
Selling oleomargarine without sign in store,	2
Selling oleomargarine in unmarked packages,	3
Selling oleomargarine from unmarked wagons,	8
Furnishing oleomargarine in restaurants, etc., without notice to guests,	87
Selling milk containing added water,	4

220

The following is a list of inspections without samples and the number of samples taken in the years 1903–10, inclusive: —

YEAR.	Inspections without Samples.	Samples taken.
1903,	4,135	1,395
1904,	4,456	1,157
1905,	4,887	971
1906,	4,985	576
1907,	4,538	1,374
1908,	5,516	1,575
1909,	5,003	1,869
1910,	6,121	1,960
Totals,	39,641	10,877
Averages,	4,955+	1,359+

OLEOMARGARINE.

No licenses for the sale of colored oleomargarine were issued in this State, and no sales of such goods have been discovered by the agents of the Bureau during the year.

The high price of butter has boomed the oleomargarine trade. Some idea of the extent may be obtained from a perusal of the following list of United States licenses for the sale of uncolored oleomargarine, in force in Massachusetts in November, 1909, and November, 1910, showing the increase of the latter over the former: —

	1909.	1910.
Wholesale licenses in Boston,	13	21
Wholesale licenses in other cities,	8	9
Total,	21	30
Retail licenses in Boston,	46	91
Retail licenses in other cities and towns,	465	607
Total,	511	698

The following figures, taken from the annual report of the United States Commissioner of Internal Revenue for 1910, show the production, withdrawn tax paid, and withdrawn for export of the two classes of oleomargarine, as defined by act of May 9, 1902, covering a period of eight years, since it went into effect on July 1, 1902:—

Oleomargarine (Pounds).

YEAR.	PRODUCT TAXED AT RATE OF 10 CENTS PER POUND.			PRODUCT TAXED AT RATE OF $\frac{1}{4}$ CENT PER POUND.		
	Produced.	With- drawn Tax paid.	With- drawn for Export.	Produced.	With- drawn Tax paid.	With- drawn for Export.
1903, . . .	5,710,407	2,312,493	3,334,969	67,573,689	66,785,796	151,693
1904, . . .	3,785,670	1,297,068	2,504,940	46,413,972	46,397,984	123,425
1905, . . .	5,560,304	3,121,640	2,405,763	46,427,032	46,223,691	137,670
1906, . . .	4,888,986	2,503,095	2,422,320	50,545,914	50,536,466	78,750
1907, . . .	7,758,529	5,009,094	2,695,276	63,608,246	63,303,016	129,350
1908, . . .	7,452,800	4,982,029	2,522,188	74,072,800	73,916,869	109,480
1909, . . .	5,710,301	3,275,968	2,403,742	86,572,514	86,221,310	112,958
1910, . . .	6,176,991	3,416,286	2,767,195	135,685,289	135,159,429	97,575
Total, . .	47,043,988	25,917,673	21,056,393	570,899,456	568,544,561	940,901

RENOVATED BUTTER.

The violations of the renovated butter law in this State during the year have been more than double what they were in 1909. The high price of butter has caused more of the goods to be used than was the case then, but, considering the amount sold, the number is not excessive, except from an ideal standpoint. There is one licensed concern in this State manufacturing renovated butter. Most of the goods are offered for sale in print form.

The following figures, from the same source as the preceding table, show the production and withdrawn tax paid of renovated butter, 1902-10:—

Renovated Butter (Pounds).

YEAR.	Production.	Withdrawn Tax paid.
1903,	54,658,790	54,223,234
1904,	54,171,183	54,204,478
1905,	60,029,421	60,171,504
1906,	53,549,900	53,361,088
1907,	62,965,613	63,078,504
1908,	50,479,489	50,411,446
1909,	47,345,361	47,402,382
1910,	47,433,575	47,378,446
Total,	430,633,332	430,231,082

. BUTTER.

The annual statement of the Chamber of Commerce, as will be seen by appended tables, shows further decrease in the consumption of butter during 1910. This is undoubtedly due, in a large measure, to the high price, wholesale average, of 30.2 cents per pound, the highest figure reached in many years.

The following table shows the average quotation for the best fresh creamery butter, in a strictly wholesale way, in the Boston market for the last nine years, as compiled by the Boston Chamber of Commerce:—

MONTH.	1910. Cents.	1909. Cents.	1908. Cents.	1907. Cents.	1906. Cents.	1905. Cents.	1904. Cents.	1903. Cents.	1902. Cents.	1901. Cents.
January, . . .	33.5	30.9	29.7	30.4	25.2	28.0	22.7	28.0	25.0	25.0
February, . . .	30.5	30.0	32.1	31.7	25.2	31.6	24.6	27.0	28.5	25.0
March,	32.0	29.1	30.2	30.2	25.5	28.0	24.1	27.0	29.0	23.0
April,	31.5	27.9	28.4	32.2	22.2	29.1	21.6	27.5	32.0	22.0
May,	29.0	26.6	24.1	31.4	19.9	23.9	19.9	22.5	25.0	19.5
June,	28.2	26.4	24.5	24.3	20.2	20.7	18.4	22.75	23.5	20.0
July,	28.6	27.2	23.6	25.9	21.0	20.6	18.3	20.5	22.5	20.0
August,	29.6	28.2	24.5	26.0	23.8	21.6	19.1	20.0	21.5	21.0
September, . .	29.6	31.3	25.3	29.2	25.6	21.2	20.8	22.0	23.5	22.0
October,	29.4	31.7	27.5	29.9	26.9	22.1	21.5	22.5	24.5	21.5
November, . . .	30.2	31.4	29.5	27.1	27.6	23.0	24.1	23.5	27.0	24.0
December, . . .	30.0	32.9	31.0	27.5	30.7	23.9	25.7	24.5	28.5	24.5
Average, . . .	30.2	29.5	27.5	28.48	24.48	24.47	21.73	26.23	25.0	22.3

The Chamber of Commerce figures regarding the butter business in Boston for 1909 and 1910 are as follows:—

	1910. Pounds.	1909. Pounds.
Carried over,	8,030,740	8,960,328
Receipts for January,	2,763,388	3,198,459
Receipts for February,	2,735,471	2,258,740
Receipts for March,	3,202,183	2,762,898
Receipts for April,	2,617,479	3,089,744
Receipts for May,	7,953,512	4,810,649
Receipts for June,	13,294,088	11,309,791
Receipts for July,	10,529,244	11,357,950
Receipts for August,	8,371,256	8,648,239
Receipts for September,	7,455,963	7,406,408
Receipts for October,	5,499,123	5,140,375
Receipts for November,	2,904,893	2,813,504
Receipts for December,	2,094,240	2,257,397
Total supply,	77,451,580	74,014,482
Exports for year, deduct,	13,650	44,050
Net supply,	77,437,930	73,970,432
Storage stock December 31, deduct,	12,272,624	8,030,740
Consumption for year,	65,165,306	65,939,692

CONDENSED AND EVAPORATED MILKS.

Table showing Results of Bacteriological Examination of Different Brands of Condensed and Evaporated Milk.

Sweetened Condensed Milk.

BRAND.	Bacteria per Cubic Centimeter, 20° C. (96 Hours).	Bacteria per Cubic Centimeter, 37° C. (24 Hours).
Vermont,	240,000	210,000
Eclipse,	30,000	34,000
Ruby,	1,150,000	1,350,000
Red Cross,	260,000	320,000
Tip Top,	15,000	35,000
Rose,	355,000	330,000
Challenge,	100	150
Eagle,	570,000	410,000
Cupid,	650	750
Standard,	700,000	550,000
Average,	332.075	323.990

*Table showing Results of Bacteriological Examination, etc. — Concluded.**Unsweetened Evaporated Milk.*

BRAND.	Bacteria per Cubic Centimeter, 20° C. (96 Hours).	Bacteria per Cubic Centimeter, 37° C. (24 Hours).
Peerless,	Less than 100	Less than 100
Wilson's,	Less than 100	150
Highland,	Less than 100	Less than 100
Gold,	Less than 100	Less than 100
Van Camp's,	500	2,100
Gold Cross,	Less than 100	Less than 100

*Table showing Cost of Equivalent of Milk Fat contained in a Quart of Milk, up to the Massachusetts Standard of 3.35 Per Cent, in the Following Brands of Sweetened Condensed Milk and Unsweetened Evaporated Milk. Calculations made upon Basis of Weight, Fat Content and Price of Each Brand.**Sweetened Condensed Milk.*

BRAND.	Cost per Quart (Cents).	BRAND.	Cost per Quart (Cents).
Tip Top,	9.24	Red Cross,	9.64
Eclipse,	13.60	Eagle,	13.52
Vermont,	9.03	Cupid,	12.41
Summit,	11.61	Challenge,	10.30
Standard,	11.73	Ruby,	12.73
Rose,	10.73	Heather,	11.81
		Average,	11.36

Unsweetened Evaporated Milk.

Highland,	11.09	Gold Cross,	7.86
Wilson's,	9.11	Gold,	9.58
Van Camp's,	10.15	Average,	9.39
Peerless,	8.55		

Table showing Price per Can, Weight of Contents, Per Cent of Fat and Times Massachusetts Fat Standard for Milk, in Twelve Samples Sweetened Condensed and Six Samples Unsweetened Evaporated Milk.

Sweetened Condensed Milk.

BRAND.	Price per Can. (Cents).	Net Weight of Contents. (Ounces).	Fat (Per Cent).	Times the Standard for Fat.
Challenge,	10	12 $\frac{5}{8}$	8.90	2.66
Rose,	12	14 $1\frac{3}{16}$	8.70	2.59
Tip Top,	11	14 $1\frac{3}{16}$	9.28	2.77
Eagle,	15	14 $1\frac{1}{16}$	9.00	2.68
Vermont,	11	14 $\frac{7}{8}$	9.50	2.83
Eclipse,	12	14 $1\frac{3}{16}$	7.50	2.24
Ruby,	11	12 $\frac{3}{8}$	9.90	2.95
Standard,	12	14 $\frac{7}{8}$	8.40	2.50
Red Cross,	12	14 $1\frac{3}{16}$	8.20	2.44
Cupid,	9	14 $\frac{3}{16}$	6.50	1.94
Summit,	10	13 $\frac{3}{4}$	7.20	2.15
Heather,	10	11 $\frac{1}{4}$	8.70	2.60

Unsweetened Evaporated Milk.

Peerless,	11	16	9.30	2.77
Gold,	10	16 $\frac{1}{8}$	7.50	2.23
Highland,	10	12	8.70	2.59
Wilson's,	10	16 $1\frac{5}{16}$	7.80	2.33
Van Camp's,	10	15 $1\frac{3}{16}$	7.20	2.15
Gold Cross,	10	16 $\frac{3}{8}$	9.00	2.68

MILK.

The following analyses of milk, taken in November, 1910, from the patrons of a milk shipping station in western Massachusetts, show milk of excellent quality, with no attempt at adulteration. The herds were composed of natives, and Holstein and Jersey grades.

SAMPLE NUMBER.	Pounds Milk.	Number Cows.	Fat (Per Cent).	Total Solids (Per Cent).	Refrac- tion.
1,	157	12	4.9	14.24	43.8
2,	173	13	4.2	13.23	43.3
3,	97	6	3.4	12.06	42.7
4,	76	9	4.6	13.91	43.8
5,	123	21	5.2	14.40	43.5
6,	128	7	4.0	12.60	42.8
7,	173	10	4.7	13.79	43.5
8,	104	12	3.8	12.75	43.0
9,	64	9	4.6	13.62	43.4
10,	74	5	3.6	12.24	42.6
11,	62	12	5.0	13.96	43.1
12,	94	11	4.9	13.44	42.0
13,	60	5	4.9	14.15	44.1
14,	144	11	4.1	13.01	43.5
15,	193	24	5.1	13.77	42.9
16,	56	15	5.2	14.18	43.0
17,	52	10	5.1	14.18	42.6
18,	98	11	5.0	14.52	43.7
19,	84	13	4.2	13.17	43.2
20,	248	26	3.8	12.37	42.2
21,	170	15	4.6	13.75	43.3
22,	148	16	3.9	12.64	43.2
23,	236	9	3.9	12.59	42.6
24,	145	17	4.2	12.98	42.5
25,	182	23	4.6	13.85	43.2
26,	31	12	4.4	13.75	44.3
27,	84	11	4.4	13.85	43.5
28,	114	8	4.6	13.74	43.2
29,	114	21	4.5	13.20	41.8
30,	262	33	4.1	13.62	43.4
31,	96	11	4.1	13.02	42.0
32,	67	13	4.1	13.11	43.1
Average,	122.4	13.46	4.49	13.42	43.02

Milk brought into Boston by Different Railroads, Dec. 1, 1909, to Nov. 30, 1910, as reported by the Railroad Commissioners (Quarts).

DATE.	Boston & Albany.	Boston & Maine.	New York, New Haven & Hartford.	Total.
1909.				
December,	1,239,835	5,448,159	2,376,820	9,064,814
1910.				
January,	1,261,493	5,271,660	2,511,295	9,044,448
February,	1,129,956	4,839,106	2,238,771	8,207,833
March,	1,308,125	5,475,064½	2,528,599	9,311,788½
April,	1,319,982	6,343,029	2,410,224	10,073,235
May,	278,791	5,218,864	2,388,932	7,886,587
June,	965,608	5,638,992	2,266,220	8,870,820
July,	1,165,639	5,599,752	2,411,087	9,176,478
August,	891,673	4,679,669	2,037,164	7,608,506
September,	904,062	4,444,055	1,881,451	7,229,568
October,	943,466	4,482,585	2,004,881	7,430,932
November,	799,828	3,938,947	1,962,578	6,701,353
Total,	12,208,458	61,379,882½	27,018,022	100,606,362½

Milk brought into Boston by Railroad for Twelve Months ending November 30 of Each Year (Quarts).

1906,	114,233,976
1907,	109,882,190½
1908,	103,381,278½
1909,	108,082,936
1910,	100,606,362½
Total decrease in four years,	13,627,613½
Average annual decrease,	3,406,903⅜

Number of Cows assessed in Massachusetts.

May 1, 1906,	181,816
April 1, 1910,	166,048
Total decrease in four years,	15,768
Average annual decrease,	3,942

LOCAL MILK INSPECTORS.

Milk Inspectors for Massachusetts Cities, 1910.

Beverly,	Henry E. Dodge, 2d.
Boston,	Prof. James O. Jordan.
Brockton,	George E. Bolling.
Cambridge,	Dr. Ernest H. Sparrow.
Chelsea,	Arthur H. Upton.
Chicopee,	C. J. O'Brien.
Everett,	E. Clarence Colby.
Fall River,	Henry Boisseau.
Fitchburg,	John F. Bresnahan.
Gloucester,	George E. Watson.
Haverhill,	Homer L. Conner, M.D.
Holyoke,	James K. Morrill.
Lawrence,	Eugene A. McCarthy.
Lowell,	Melvin F. Master.
Lynn,	Alexander S. Wright.
Malden,	J. A. Sanford.
Marlborough,	John J. Cassidy.
Medford,	Winslow Joyce.
Melrose,	Caleb W. Clark, M.D.
New Bedford,	Herbert B. Hamilton. D.V.S.
Newburyport,	T. D. Donahoe.
Newton,	Arthur Hudson.
North Adams,	Henry A. Tower.
Northampton,	George R. Turner.
Pittsfield,	Eugene L. Hannon.
Quincy,	Edward J. Murphy.
Salem,	John J. McGrath.
Somerville,	Herbert E. Bowman.
Springfield,	Stephen C. Downs.
Taunton,	Lewis I. Tucker.
Waltham,	Arthur E. Stone, M.D.
Woburn,	P. T. McDonough.
Worcester,	Gustaf L. Berg.

Milk Inspectors Massachusetts Towns, 1910.

Adams,	Dr. A. G. Potter.
Amesbury,	E. S. Worthen.
Andover,	Franklin H. Stacy.
Arlington,	Dr. L. L. Pierce.
Attleborough,	Caleb Parmenter.
Barnstable,	George T. Mecarta.
Belmont,	Prof. Samuel C. Prescott.

Brookline,	Frederick H. Osgood.
Clinton,	Gilman L. Chase.
Greenfield,	M. L. Miner, D.V.S.
South Hadley Falls,	George F. Boudreau.
Hyde Park,	James G. Bolles.
Leominster,	William H. Dodge, D.V.S.
Ludlow,	A. L. Bennett, D.V.S.
Monson,	Dr. Charles W. Jackson.
North Attleborough,	Hugh Gaw, V.S.
Palmer,	Edward F. Brown.
Revere,	Joseph E. Lamb.
South Framingham,	Charles N. Hargraves.
Stoneham,	George H. Allen.
Wakefield,	Harry A. Simonds.
Ware,	Fred E. Marsh.
Watertown,	Luther W. Simonds.
Westfield,	William H. Porter.
Williamstown,	C. L. Whitney.
Winchendon,	Frederick W. Russell, M.D.
Winchester,	Morris Dineen.

CREAMERIES, MILK DEPOTS, ETC.

Co-operative Creameries.

NUMBER AND LOCATION.	Name.	Superintendent or Manager.
1. Ashfield,	Ashfield Creamery,	William Hunter, manager.
2. Belchertown,	Belchertown Creamery,	M. G. Ward, president.
3. Cummington,	Cummington Creamery,	D. C. Morey, superintendent.
4. Easthampton,	Hampton Creamery,	W. H. Wright, treasurer.
5. Egremont (P. O. Great Barrington).	Egremont Creamery,	E. A. Tyrrell, manager.
6. Monterey,	Berkshire Hills Creamery,	F. A. Campbell, manager.
7. New Boston,	Berkshire Creamery,	F. M. Rugg, president.
8. New Salem (P. O. Millington).	New Salem Creamery,	W. A. Moore, treasurer.
9. Northfield,	Northfield Co-operative Creamery Association.	Chas. C. Stearns, superintendent.
10. Shelburne,	Shelburne Creamery,	Ira Barnard, manager.
11. Westfield (P. O. Wyben),	Wyben Springs Creamery,	C. H. Kelso, manager.
12. West Newbury,	West Newbury Creamery,	R. S. Brown, treasurer.

Proprietary Creameries.

NUMBER AND LOCATION.	Name.	Owner or Manager.
1. Amherst, . . .	Amherst Creamery, . . .	W. A. Pease.
2. Amherst, . . .	Fort River Creamery, . . .	E. A. King.
3. Brimfield, . . .	Crystal Brook Creamery, . . .	F. N. Lawrence.
4. Everett, . . .	Hampden Creamery Company,	Hampden Creamery Com- pany.
5. Fitchburg, 26 Cushing Street.	Fitchburg Creamery, . . .	G. S. Learned.
6. Gardner, . . .	Boston Dairy Company, . . .	Boston Dairy Company.
7. Groton, . . .	Lawrence Creamery, . . .	Myron P. Swallow.
8. Heath, . . .	Cold Spring Creamery, . . .	I. W. Stetson & Son.
9. Hinsdale, . . .	Hinsdale Creamery, . . .	Ashley B. Clark, treasurer.
10. Marlborough, . . .	Este's Creamery, . . .	F. F. Este.
11. North Brookfield, . . .	North Brookfield Creamery, . . .	H. A. Richardson.

Educational.

Amherst,	Dairy Industry Course, Massa- chusetts Agricultural College.	W. P. B. Lockwood, pro- fessor in charge.
--------------------	---	--

Milk-distributing Depots.

NAME.	Location.	Manager.
Alden Bros.,	Boston office, 1171 Tremont Street, Depot, 24-28 Duncan Street.	Charles L. Alden.
Boston Dairy Company, . . .	Boston, 484 Rutherford Avenue, . . .	W. A. Grostein.
C. Brigham Company, . . .	Cambridge, 158 Massachusetts Ave- nue.	John K. Whiting.
C. Brigham Company, . . .	Worcester, 9 Howard Street, . . .	C. Brigham Company.
Deerfoot Farms,	Southborough,	S. H. Howes.
Elm Farm Milk Company, . . .	Boston, Wales Place,	James H. Knapp, treasurer.
H. P. Hood & Sons,	Boston, 494 Rutherford Avenue, branch, 24 Anson Street, Forest Hills. Lynn, 193 Alley Street. Malden, 425 Main Street. Salem, 252 Bridge Street. Watertown, 289 Pleasant Street. Lawrence, 629 Common Street.	Charles H. Hood.
Springfield Co-operative Milk Association.	Springfield,	F. B. Allen.
Tait Bros.,	Springfield,	Tait Bros.
Wachusett Creamery,	Worcester,	E. H. Thayer & Co.
D. Whiting & Sons,	Boston, 570 Rutherford Avenue, . . .	George Whiting.

Milk Laboratory.

NAME.	Location.	Manager.
Walker-Gordon Laboratory,	Boston, 793 Boylston Street, . .	George W. Franklin.

Receiving Depots for Milk for Shipments to New York City.

F. D. Shove Milk Factory,	West Stockbridge,	C. M. Riggs.
Willow Brook Dairy Company.	Sheffield,	Frank Percy.

EXPENSES.

The following is a classified statement of the expenses for the year ending Nov. 30, 1910:—

Bureau: compensation and traveling expenses, . .	\$453 27
Agents: compensation,	2,425 84
Agents: traveling expenses and samples purchased, .	2,922 71
General agent: traveling and necessary expenses, . .	435 83
Chemists: analyses, tests, court attendance, . . .	1,449 40
Printing and supplies,	312 95
Total,	\$8,000 00

P. M. HARWOOD,

General Agent.

Accepted and adopted as the report of the Dairy Bureau.

CHARLES M. GARDNER.

H. A. PARSONS.

GEORGE W. TRULL.

TWENTY-FIRST ANNUAL REPORT

OF THE

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 15, 1912.



BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,

18 POST OFFICE SQUARE.

1912.

TWENTY-FIRST ANNUAL REPORT

OF THE

Mass:

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 15, 1912.



BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,

18 POST OFFICE SQUARE.

1912.

APPROVED BY
THE STATE BOARD OF PUBLICATION.

DEC 11 1917

614.32M3

D13n

1911

B

DAIRY BUREAU -- 1911.

CHARLES M. GARDNER, WESTFIELD, *Chairman.*

HOWARD A. PARSONS, NORTH AMHERST.

GEORGE W. TRULL, TEWKSBURY, P. O. LOWELL, R. F. D.

Secretary.

J. LEWIS ELLSWORTH, *Executive Officer and Secretary of the
State Board of Agriculture.*

General Agent.

P. M. HARWOOD.

ADDRESS, ROOM 136, STATE HOUSE, BOSTON.

The Commonwealth of Massachusetts.

REPORT OF THE DAIRY BUREAU.

There have been entered in court, during the year 1911, 219 cases, 157 of which were for violation of the oleomargarine laws, 60 for violation of the renovated butter law and 2 for violation of the milk adulteration law, resulting in 215 convictions, and 1 case nol-prossed. Seven thousand two hundred and eighty-one inspections of stores, wagons, etc., have been made by the agents; most of the creameries, milk depots,¹ etc., have been inspected by members of the Bureau, and suggestions made as to bettering conditions where needed.

By way of educational work special dairy meetings have been held at Barre, Littleton, Newbury, New Bedford, Shelburne, Worcester and Wayland. These meetings have been addressed by leading dairy experts from various parts of the country. Other meetings have been addressed by the general agent, making a total of 26 lectures.

MILK SUPPLY.

It is worthy of comment that United States government officials and others agree that the milk supply of this State is among the best in the country. To those who have closely watched the improvement which has been going on for years this seems but the logical result of constant and persistent effort. May the improvement continue, and Massachusetts never be elsewhere than in the front of the procession in the matter of her milk supply.

¹ We especially commend the methods and care exercised by the Willow Brook Dairy Company at Sheffield, Mass. This plant is new and with its modern appliances and system of buying comes the nearest to an ideal of any shipping station we have seen. The milk is shipped to New York City. The creamery at New Boston has gone out of business.

In our annual reports since 1906 we have from time to time called attention to the decline in volume of dairying in this State, as shown by the decreasing number of cows year by year. We are glad to note that, according to the last assessors' returns, the decline has ceased, and the business seems at present to be holding its own.

PASTEURIZED MILK.

Most of the market milk sold in Boston is pasteurized. Many physicians and sanitarians advocate this as a precaution against disease. The great objection to pasteurization is that it provides an opportunity to sell old milk that otherwise might be unsalable. Clean milk pasteurized is a safe and desirable product, and there should be regulations by local authorities requiring in some way a guarantee in relation to its age, and also its bacteria count at the time of pasteurizing.

CONDENSED MILK.

The act recommended last year by the Bureau, requiring a formula for the dilution of reduced milks with water, to make standard fluid milk equivalent, became a law Jan. 1, 1912. It is reported that twenty carloads of condensed and evaporated milk are brought into this State each month, and more than 17,000 retail dealers are selling these goods. It is also reported that the evaporated milk output alone in the United States has increased 154 per cent during the last five years. If evaporated and condensed milks are used to such a large degree it seems desirable that the age be known, and we recommend the following amendment to section 59, chapter 56, of the Revised Laws, with a view to accomplishing this result:—

AN ACT RELATIVE TO THE SALE OF CONDENSED, CONCENTRATED OR EVAPORATED MILK OR SKIMMED MILK.

Be it enacted, etc., as follows:

SECTION 1. Section fifty-nine of chapter fifty-six of the Revised Laws is hereby amended by inserting before the word "milk", where it first occurs in line two, the words:—condensed or evaporated,—by striking out the word "condensed", in line two,—by

striking out the word "and", in line four, — by inserting after the word "can", in line five, the words: — and date of manufacture, — by inserting after the word "condensed", in line five, — the words: — concentrated or evaporated, — by inserting after the word "milk", in line five, the words: — or skimmed milk, — by inserting after the word "manufacture", in line seven, the words, — and date of manufacture, — so as to read as follows: — *Section 59.* Whoever sells, or offers for sale or exchange, condensed, concentrated or evaporated milk or skimmed milk in hermetically sealed cans without having such cans distinctly labeled with the name of the manufacturer of such milk, the brand under which it is made, the contents of the can and the date of manufacture; and whoever sells condensed, concentrated or evaporated milk or skimmed milk from cans or packages not hermetically sealed, without having such cans or packages branded or labeled with the name of the manufacturer, and date of manufacture, shall be punished as provided in section fifty-five.

SECTION 2. This act shall take effect upon the first day of September, nineteen hundred and twelve.

MILK CONSUMPTION.

Consumption of un-reduced fluid milk, in Boston at least, shows a marked decline in the last five years. In 1906, 114,233,976 quarts were shipped in by rail, while in 1910, 100,606,362½ quarts were shipped by rail, showing a decline in four years of 13,627,613½ quarts. During the twelve months, Dec. 1, 1910, to Nov. 30, 1911, there was a further decline of 10,503,590½ quarts, making a total decrease of 24,141,204½ quarts in five years.

This Bureau is, and always has been, in favor of clean milk, and we believe that two essentials are necessary in procuring it. One is the inspection of the milk daily, as it leaves the farmer's hands, for bacteria count, requiring that it be below a fixed standard, and the other is that the farmer be paid for so producing and delivering it. This milk should again be inspected by the local authorities in the various cities and towns at the point of delivery. Such inspection would accomplish results, but would increase the cost, and therefore might raise the present price of market milk. It is for the public to decide, by its willingness to pay, whether or not such milk is wanted.

OLEOMARGARINE.

The number of retail oleomargarine licenses in force in this State November, 1910, was 698, while in 1911 it was 459, showing a decrease of 239. Oleomargarine receipts in Boston, as reported by the Chamber of Commerce in 1910, was 138,981 packages, while in 1911 it was 104,685, showing a decrease of 34,296 packages. Oleomargarine produced in the United States in 1910 was 141,862,280 pounds, while in 1911 it was 121,279,001 pounds, showing a decrease of 20,593,279 pounds.

RENOVATED BUTTER.

In 1910 there were 47,433,574 pounds of renovated butter produced in the United States, while in 1911 there were 39,292,591 pounds, showing a decrease of 8,140,984 pounds in twelve months.

BUTTER.

The average wholesale price of butter, per Chamber of Commerce reports, for 1910 was 30.2 cents, while in 1911 it was 27.3 cents. The increased consumption of butter in 1911 over 1910, Boston output, was 4,294,156 pounds, which, when compared with the figures given under the two preceding heads, shows how intimately connected are these three products, and how dependent all are upon the price of butter.

MASSACHUSETTS DAIRYMEN'S ASSOCIATION.

For some years this Bureau has advocated the organization of a State Dairymen's Association. We are glad to report that such an association is now an accomplished fact, the Massachusetts Dairymen's Association having been chartered during the summer of 1911. We believe there are great possibilities for this organization.

PERSONNEL OF THE BUREAU.

The personnel of the Bureau has remained unchanged and is as follows: Charles M. Gardner of Westfield, chairman, Howard A. Parsons of Amherst and George W. Trull

of Tewksbury. The executive force, agents, chemists, etc., are as follows: executive officer and secretary, J. Lewis Ellsworth; general agent, P. M. Harwood; B. F. Davenport, M.D., of Boston, and F. W. Farrell of the Emerson Laboratory, Springfield, have done the chemical work. A. W. Lombard has continued to act as agent, and five others have been temporarily employed from time to time.

SUMMARY OF POLICE WORK.

Total number of inspections,	17,281
Number of inspections where no sample was taken,	5,995
Number of samples of butter and oleomargarine, all purchased,	1,282
Number of samples of milk and cream,	35
Cases entered in court,	219
Addresses by general agent and others,	26

Cases prosecuted during the twelve months ending Nov. 30, 1911, by months and courts, with law violated, and results, are as follows:—

COURT.	Month.	Number.	Law violated.	Convicted.	Discharged.
Newburyport, Police,	December,	6	3 oleomargarine, 3 renovated butter.	6	—
Worcester, Central District,	December,	2	1 oleomargarine, 1 renovated butter.	2	—
Springfield, Police,	December,	13	Oleomargarine,	13	—
Salem, First Essex District,	December,	2	Oleomargarine,	2	—
Holyoke, Police,	January,	12	6 oleomargarine, 6 renovated butter.	12	—
Springfield, Police,	January,	28	18 oleomargarine, 10 renovated butter.	28	—
Attleborough, Fourth Bristol District,	January,	4	Renovated butter,	4	—
Waltham, Police,	January,	8	Oleomargarine,	8	—
Chicopee, Police,	January,	2	Oleomargarine,	1 ²	1
New Bedford, Third Bristol District,	January,	23	Oleomargarine,	23	—
Newton, Police,	January,	2	Oleomargarine,	2	—
Malden, First Eastern Middlesex,	February,	1	Oleomargarine,	1	—
Attleborough, Fourth Bristol District,	February,	11	4 oleomargarine, 7 renovated butter.	11	—
Lowell, Police,	February,	10	8 oleomargarine, 2 renovated butter.	10	—
Fitchburg, Police,	March,	4	Oleomargarine,	4	—

¹ There were 31 extra samples taken during the year, therefore this number is less than the sum of the next three items.

² Convicted in lower court but not-prossed by district attorney in Superior Court.

COURT.	Month.	Num-ber.	Law violated.	Con-victed.	Dis-charged.
Webster, First Southern Worcester.	March, .	17	2 oleomargarine, 15 renovated butter.	17	-
Leominster, Police, . .	March, .	1	Oleomargarine, .	1	-
Greenfield, Franklin Dis-trict.	March, .	2	Oleomargarine, .	2	-
Springfield, Police, . .	March, .	3	Oleomargarine, .	3	-
Spencer, Western Worcester,	March, .	8	2 oleomargarine, 6 renovated butter.	8	-
Lynn, Police,	March, .	5	Oleomargarine, .	4	1
Dedham, Northern Norfolk,	April, . .	2	Renovated butter,	2	-
Worcester, Central District,	April, . .	9	Oleomargarine, .	9	-
Ayer, First Northern Mid-dlesex,	March, . .	1	Milk,	-	1
Uxbridge, Second Southern Worcester.	May, . . .	1	Oleomargarine, .	1	-
Boston, Municipal, . . .	June, . . .	1	Oleomargarine, .	1	-
Fall River, Second Bristol,	May, . . .	2	Oleomargarine, .	2	-
Springfield, Police, . . .	July, . . .	1	Milk,	1	-
Worcester, Central District,	July, . . .	1	Oleomargarine, .	1	-
Boston, Roxbury District, .	August, . .	2	Renovated butter,	2	-
Plymouth, Third Plymouth,	October, . .	2	Oleomargarine, .	2	-
Abington, Second Plymouth,	October, . .	4	Oleomargarine, .	4	-
Chelsea, Police,	November, .	3	Oleomargarine, .	3	-
Quincy, Eastern Norfolk, .	November, .	26	24 Oleomargarine, 2 renovated butter.	26	-

NOTE. — The Bureau is especially indebted to the milk inspectors of Boston, Chelsea, Revere, Salem, Springfield and Worcester for assistance which has resulted in cases in court. We also record our indebtedness to all others who have aided us in any way.

The charges in the several cases entered in court for the year ending Nov. 30, 1911, have been as follows:—

Selling renovated butter in unmarked packages,	60
Selling oleomargarine when butter was asked for,	9
Selling oleomargarine without being registered,	4
Selling oleomargarine without sign on exposed contents,	2
Selling oleomargarine in unmarked ¹ packages,	32
Selling oleomargarine from unmarked wagons,	4
Furnishing oleomargarine in restaurants, etc., without notice, to guests,	106
Selling milk containing added water,	2

¹ In these cases oleomargarine was sold when butter was asked for, but the charge was made in this way for convenience.

The following is a list of inspections without samples and the number of samples taken in the years 1903–11, inclusive: —

YEAR.	Inspections without Samples.	Samples taken.
1903,	4,135	1,395
1904,	4,456	1,157
1905,	4,887	971
1906,	4,985	576
1907,	4,538	1,374
1908,	5,516	1,575
1909,	5,003	1,869
1910,	6,121	1,960
1911,	5,995	1,282
Totals,	45,636	12,159
Averages,	5,070+	1,351

OLEOMARGARINE.

No sales of colored oleomargarine have been discovered by the agents of the Bureau during the year.

On account of the lower price of butter the oleomargarine trade has declined somewhat. Some idea of the extent of this may be obtained from a comparison of uncolored oleomargarine licenses in force in Massachusetts in November, 1910 and 1911, with the prices of butter for those years.

	1910.	1911.
Wholesale licenses in Boston,	21	20
Wholesale licenses in other cities,	9	8
Total,	30	28
Retail licenses in Boston,	91	61
Retail licenses in other cities and towns,	607	398
Total,	698	459

For prices of butter see page 13.

The following figures, taken from the annual report of the United States Commissioner of Internal Revenue for

1911, show the production, withdrawn tax paid, and withdrawn for export of the two classes of oleomargarine, as defined by act of May 9, 1902, covering the period of nine years, since it went into effect on July 1, 1902:—

Oleomargarine (Pounds).

YEAR.	PRODUCT TAXED AT RATE OF 10 CENTS PER POUND. ¹			PRODUCT TAXED AT RATE OF $\frac{1}{4}$ CENT PER POUND. ²		
	Produced.	With- drawn Tax paid.	With- drawn for Export.	Produced.	With- drawn Tax paid.	With- drawn for Export.
1903, . . .	5,710,407	2,312,493	3,334,969	67,573,689	66,785,796	151,693
1904, . . .	3,785,670	1,297,068	2,504,940	46,413,972	46,397,984	123,425
1905, . . .	5,560,304	3,121,640	2,405,763	46,427,032	46,223,691	137,670
1906, . . .	4,888,986	2,503,095	2,422,320	50,545,914	50,536,466	78,750
1907, . . .	7,758,529	5,009,094	2,695,276	63,608,246	63,303,016	129,350
1908, . . .	7,452,800	4,982,029	2,522,188	74,072,800	73,916,869	109,480
1909, . . .	5,710,301	3,275,968	2,403,742	86,572,514	86,221,310	112,958
1910, . . .	6,176,991	3,416,286	2,767,195	135,685,289	135,159,429	97,575
1911, . . .	5,830,995	2,764,971	3,054,344	115,331,800	115,448,006	91,770
Total,	52,874,983	28,682,644	24,110,737	686,231,256	683,992,567	1,032,651

¹ Colored oleomargarine.

² Uncolored oleomargarine.

In Boston the Chamber of Commerce reports receipts for 1911, 104,685 packages, against 138,981 in 1910, — a decrease of 34,296 packages.

RENOVATED BUTTER.

Violations of the renovated butter law in this State during the year have been less than in 1910. The lower price of butter has caused less of the goods to be used than was the case last year. There is one licensed concern in this State manufacturing renovated butter.

The following figures, from the same source as the preceding table, show the production and withdrawn tax paid of renovated butter, 1902–11:—

Renovated Butter (Pounds).

YEAR.	Production.	Withdrawn Tax paid.
1903,	54,658,790	54,223,234
1904,	54,171,183	54,204,478
1905,	60,029,421	60,171,504
1906,	53,549,900	53,361,088
1907,	62,965,613	63,078,504
1908,	50,479,489	50,411,446
1909,	47,345,361	47,402,382
1910,	47,433,575	47,378,446
1911,	39,292,591	39,352,445
Total,	469,925,923	469,583,527

BUTTER.

The annual statement of the Chamber of Commerce, as will be seen by the appended tables, shows increase in the consumption of butter during 1911, due undoubtedly to the lower wholesale average price of 27.3 cents per pound, the lowest since 1906.

The following table shows the average quotation for the best fresh creamery butter, in a strictly wholesale way, in the Boston market for the last ten years, as compiled by the Boston Chamber of Commerce:—

MONTH.	1911. Cents.	1910. Cents.	1909. Cents.	1908. Cents.	1907. Cents.	1906. Cents.	1905. Cents.	1904. Cents.	1903. Cents.	1902. Cents.
January, . . .	28.8	33.5	30.9	29.7	30.4	25.2	28.0	22.7	28.0	25.0
February, . . .	26.9	30.5	30.0	32.1	31.7	25.2	31.6	24.6	27.0	28.5
March,	24.2	32.0	29.1	30.2	30.2	25.5	28.0	24.1	27.0	29.0
April,	21.7	31.5	27.9	28.4	32.2	22.2	29.1	21.6	27.5	32.0
May,	22.8	29.0	26.6	24.1	31.4	19.9	23.9	19.9	22.5	25.0
June,	24.2	28.2	26.4	24.5	24.3	20.2	20.7	18.4	22.75	23.5
July,	26.0	28.6	27.2	23.6	25.9	21.0	20.6	18.3	20.5	22.5
August,	27.2	29.6	28.2	24.5	26.0	23.8	21.6	19.1	20.0	21.5
September, . .	27.7	29.6	31.3	25.3	29.2	25.6	21.2	20.8	22.0	23.5
October,	30.4	29.4	31.7	27.5	29.9	26.9	22.1	21.5	22.5	24.5
November, . . .	32.5	30.2	31.4	29.5	27.1	27.6	23.0	24.1	23.5	27.0
December, . . .	35.0	30.0	32.9	31.0	27.5	30.7	23.9	25.7	24.5	28.5
Average, . . .	27.3	30.2	29.5	27.5	28.48	24.48	24.47	21.73	26.23	25.0

The Chamber of Commerce figures regarding the butter business in Boston for 1910 and 1911 are as follows:—

	1911. Pounds.	1910. Pounds.
Carried over,	12,272,624	8,030,740
Receipts for January,	2,058,615	2,763,388
Receipts for February,	2,834,187	2,735,471
Receipts for March,	3,290,750	3,202,183
Receipts for April,	3,741,069	2,617,479
Receipts for May,	6,070,694	7,953,512
Receipts for June,	12,254,528	13,294,088
Receipts for July,	8,282,769	10,529,244
Receipts for August,	7,702,794	8,371,256
Receipts for September,	6,288,939	7,455,963
Receipts for October,	5,000,839	5,499,123
Receipts for November,	3,329,460	2,904,893
Receipts for December,	3,019,606	2,094,240
Total supply,	76,146,874	77,451,580
Exports for year, deduct,	74,448	13,650
Net supply,	76,072,428	77,437,930
Storage stock December 30, deduct,	6,612,966	12,272,624
Consumption for year,	69,459,462	65,165,306
Gain, 4,294,156 pounds.		

MILK.

Milk brought into Boston by Different Railroads, Dec. 1, 1910, to Nov. 30, 1911, as reported by the Railroad Commissioners (Quarts).

DATE.	Boston & Albany.	Boston & Maine.	New York, New Haven & Hartford.	Total.
1910.				
December,	837,902	3,893,803	1,891,326	6,623,031
1911.				
January,	954,991	3,920,531	1,943,600	6,819,122
February,	778,233	3,810,408	1,798,264	6,386,905
March,	947,997	3,874,625	2,005,974	6,828,596
April,	970,421	4,162,647½	1,819,823	6,952,891½
May,	1,000,904	4,581,592	2,007,567	7,590,063
June,	1,059,773	4,742,761½	2,023,276	7,825,810½
July,	814,939	6,206,046	1,702,749	8,723,734
August,	807,635	5,135,598	1,918,993	7,862,226
September,	794,337	5,285,888	1,910,729	7,990,954
October,	904,345	5,492,557	1,795,274	8,192,176
November,	1,042,719	5,675,805	1,578,739	8,297,263
Total,	10,914,196	56,782,262	22,396,314	90,092,772

*Milk brought into Boston by Railroad for Twelve Months ending
November 30 of Each Year (Quarts).*

1906,	114,233,976
1907,	109,882,190½
1908,	103,381,278½
1909,	108,082,936
1910,	100,606,362½
1911,	90,092,772
Total decrease in five years,	24,141,204
Average annual decrease,	4,828,241

Number of Cows assessed in Massachusetts.

May 1, 1906,	181,816
April 1, 1910,	166,048
April 1, 1911,	166,500
Total decrease in five years,	15,316
Average annual decrease,	3,063

LOCAL MILK INSPECTORS.

Milk Inspectors for Massachusetts Cities, 1911.

Beverly,	Henry E. Dodge, 2d.
Boston,	Prof. James O. Jordan.
Brockton,	George E. Bolling.
Cambridge,	Dr. Ernest H. Sparrow.
Chelsea,	Arthur H. Upton.
Chicopee,	C. J. O'Brien.
Everett,	E. Clarence Colby.
Fall River,	Henry Boisseau.
Fitchburg,	John F. Bresnahan.
Gloucester,	Dr. George E. Watson.
Haverhill,	Homer L. Connor, M.D.
Holyoke,	Daniel P. Hartnett.
Lawrence,	Eugene A. McCarthy.
Lowell,	Melvin F. Master.
Lynn,	Alexander S. Wright.
Malden,	J. A. Sandford.
Marlborough,	John J. Cassidy.
Medford,	Winslow Joyce.
Melrose,	Caleb W. Clark, M.D.
New Bedford,	Herbert B. Hamilton, D.V.S.
Newburyport,	Dr. R. D. Hamilton.

Newton,	Arthur Hudson.
North Adams,	Henry A. Tower.
Northampton,	George R. Turner.
Pittsfield,	Eugene L. Hannon.
Quincy,	Edward J. Murphy.
Salem,	John J. McGrath.
Somerville,	Herbert E. Bowman.
Springfield,	Stephen C. Downs.
Taunton,	Lewis I. Tucker.
Waltham,	Arthur E. Stone, M.D.
Woburn,	Edward P. Kelly, M.D.
Worcester,	Gustaf L. Berg.

Milk Inspectors for Massachusetts Towns, 1911.

Adams,	Dr. A. G. Potter.
Amesbury,	E. S. Worthen.
Andover,	Franklin H. Stacey.
Arlington,	Dr. L. L. Pierce.
Attleborough,	Caleb E. Parmenter.
Barnstable,	George T. Mecarta.
Belmont,	Prof. Samuel C. Prescott.
Brookline,	Frederick H. Osgood.
Clinton,	Gilman L. Chase.
Concord,	Erastus H. Smith.
Easthampton,	George L. McEvoy.
Gardner,	Clifford W. Shippee.
Greenfield,	George P. Moore.
Hudson,	Dr. A. L. Crandall.
Hyde Park,	James G. Bolles.
Leominster,	William H. Hodge, D.V.S.
Ludlow,	A. L. Bennett, D.V.S.
Millbury,	Arthur A. Brown.
Monson,	E. W. Capen.
North Attleborough,	Hugh Gaw, V.S.
Palmer,	Edward P. Brown.
Peabody,	H. S. Pomery, M.D.
Revere,	Joseph E. Lamb.
Salisbury,	John H. Pike.
South Framingham,	Dr. J. H. McCann.
South Hadley Falls,	George F. Boudreau.
Spencer,	James A. Spencer.
Stoneham,	George H. Allen.
Wakefield,	Harry A. Simonds.

Ware,	Fred E. Marsh.
Watertown,	Luther W. Simonds.
Wellesley,	Cecil K. Blanchard.
Westfield,	William H. Porter.
West Springfield,	Norman T. Smith.
Williamstown,	G. S. Jordan, V.S.
Winchendon,	Frederick W. Russell, M.D.
Winchester,	Morris Dineen.

CREAMERIES, MILK DEPOTS, ETC.

Co-operative Creameries.

NUMBER AND LOCATION.	Name.	Superintendent or Manager.
1. Ashfield,	Ashfield Creamery,	William Hunter, manager.
2. Belchertown,	Belchertown Creamery,	M. G. Ward, president.
3. Cummington,	Cummington Creamery,	D. C. Morey, superintendent.
4. Easthampton,	Hampton Creamery,	W. H. Wright, treasurer.
5. Egremont (P. O. Great Barrington),	Egremont Creamery,	E. Q. Tyrrell, manager.
6. Monterey,	Berkshire Hills Creamery,	F. A. Campbell, treasurer.
7. New Salem (P. O. Millington),	New Salem Creamery,	W. A. Moore, treasurer.
8. Northfield,	Northfield Co-operative Creamery Association.	Charles C. Stearns, superintendent.
9. Shelburne,	Shelburne Creamery,	Ira Barnard, manager.
10. Westfield (P. O. Wyben),	Wyben Springs Creamery,	C. H. Kelso, manager.
11. West Newbury,	West Newbury Creamery,	R. S. Brown, treasurer.

Proprietary Creameries.

NUMBER AND LOCATION.	Name.	Owner or Manager.
1. Amherst,	Amherst Creamery Company,	R. W. Pease, manager.
2. Amherst,	Fort River Creamery,	E. A. King, proprietor.
3. Brimfield,	Crystal Brook Creamery,	F. N. Lawrence, proprietor.
4. Everett,	Hampden Creamery Company,	Hampden Creamery Company.
5. Fitchburg, 26 Cushing Street,	Fitchburg Creamery,	G. S. Learned, proprietor.
6. Gardner,	Boston Dairy Company,	Boston Dairy Company.
7. Groton,	Lawrence Creamery,	Myron P. Swallow, manager.
8. Heath,	Cold Spring Creamery,	I. W. Stetson & Son.
9. Hinsdale,	Hinsdale Creamery,	Walter C. Solomon, proprietor.
10. Marlborough,	Este's Creamery,	F. F. Este, proprietor.
11. North Brookfield,	North Brookfield Creamery,	H. A. Richardson, proprietor.

Educational.

NUMBER AND LOCATION.	Name.	Owner or Manager.
Amherst,	Dairy Industry Course, Massachusetts Agricultural College.	W. P. B. Lockwood, professor in charge.

Milk-distributing Depots.

NAME.	Location.	Manager.
Alden Brothers Company, Oak Grove Farm.	Boston office, 1171 Tremont Street, Depot, 24-28 Duncan Street.	Charles L. Alden, president, John Alden, treasurer.
Boston Dairy Company, .	Boston, 484 Rutherford Avenue, .	W. A. Graustein.
C. Brigham Company, .	Cambridge, 158 Massachusetts Avenue.	John K. Whiting.
C. Brigham Company, .	Worcester, 9 Howard Street, .	C. Brigham Company.
Deerfoot Farms, . . .	Southborough,	S. H. Howes.
Elm Farm Milk Company,	Boston, Wales Place,	James H. Knapp, treasurer.
H. P. Hood & Sons, . . .	Boston, 494 Rutherford Avenue; branch, 24 Anson Street, Forest Hills. Lynn, 193 Alley Street. Malden, 425 Main Street. Salem, 252 Bridge Street. Watertown, 289 Pleasant Street. Lawrence, 629 Common Street.	Charles H. Hood.
Springfield Creamery, .	Springfield,	F. B. Allen, proprietor.
Tait Brothers,	Springfield,	Tait Brothers, proprietors.
Wachusett Creamery, .	Worcester,	E. H. Thayer & Co., proprietors.
D. Whiting & Sons, . . .	Boston, 570 Rutherford Avenue, .	George Whiting.

Milk Laboratory.

Walker-Gordon Laboratory,	Boston, 793 Boylston Street, . .	George W. Franklin.
---------------------------	----------------------------------	---------------------

Receiving Depots for Milk, for Shipments to New York City.

The Borden Company of New York.	West Stockbridge,	F. H. Glass.
Willow Brook Dairy Company.	Sheffield,	Frank Percy.

EXPENSES.

The following is a classified statement of the expenses for the year ending Nov. 30, 1911:—

Bureau: compensation and traveling expenses, . . .	\$636 71
Agents: compensation,	2,418 00
Agents: traveling expenses and samples purchased, .	2,931 00
General agent: traveling and necessary expenses, .	483 31
Chemists: analyses, tests, court attendance, . . .	1,158 60
Printing and supplies,	127 99
Educational,	219 39
<hr/>	
Total,	\$7,975 00

P. M. HARWOOD,
General Agent.

Accepted and adopted as the report of the Dairy Bureau,

CHARLES M. GARDNER.
H. A. PARSONS.
GEO. W. TRULL.

TWENTY-SECOND ANNUAL REPORT

OF THE

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 15, 1913.



BOSTON:
WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
18 POST OFFICE SQUARE.
1913.

TWENTY-SECOND ANNUAL REPORT

OF THE

DAIRY BUREAU

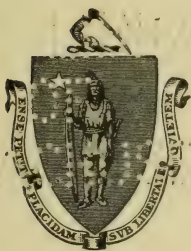
OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 15, 1913.



BOSTON:
WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
18 POST OFFICE SQUARE.

1913.

STATE LIBRARY OF MASS.

APR 1 1913

STATE HOUSE, BOSTON.

APPROVED BY
THE STATE BOARD OF PUBLICATION.

WASSELL STATE
70
311324105244

614.32103

213 n

1912.

B

DAIRY BUREAU—1912.

CHARLES M. GARDNER, WESTFIELD, *Chairman.*

GEORGE W. TRULL, TEWKSBURY, P. O. LOWELL, R. F. D.

OMER E. BRADWAY, MONSON, MASS.

Secretary.

J. LEWIS ELLSWORTH, *Executive Officer and Secretary of the
State Board of Agriculture.*

General Agent.

P. M. HARWOOD.

ADDRESS, ROOM 136, STATE HOUSE, BOSTON.

The Commonwealth of Massachusetts.

REPORT OF THE DAIRY BUREAU.

The police work of this department for the year 1912 has consisted of 8,028 inspections, resulting in 216 court cases and 216 convictions. One hundred and twenty-two of these prosecutions were for violation of the oleomargarine law, 88 for selling renovated butter in unmarked packages, and 6 for having in possession with intent to sell milk containing added water.

In the educational work the Bureau has provided several dairy institutes which were addressed by Dr. Charles E. North of New York City and others, with a view of informing the public of the modern rational method of securing clean milk by paying more for it. Twenty-eight addresses have been given by the general agent and others at dairy meetings during the year. Most of these lectures have been along the line of educating the consuming public to the true food value of milk, and the fairness of paying producers as much at least as the same nutrition costs in other foods of like origin, nutritive ratio and digestibility. The general agent upon invitation visited the plant of the New York Demonstration Company at Homer, and attended meetings of the national commission on milk standards both at Homer and New York City, also a conference of dairy interests at Albany, N. Y., to consider the national oleomargarine question. He has also prepared a bulletin on the food value of milk for the dissemination department of the State Board of Agriculture.

The Bureau has made its annual inspection of creameries, milk depots, etc., and has found as in previous years conditions gradually changing. Some creameries have gone out of business, some are on the verge of giving up, while others are increasing their output, in some cases materially. As in other lines of milk handling, there is of necessity continual adjustment to modern conditions.

THE DAIRY SITUATION.

The largest number of cows ever assessed in Massachusetts was 200,658, in 1890. The bovine tuberculosis campaign subsequently followed, with the result that in 1897 the number was reduced to 171,485. There was from this time on a gradual increase, with some fluctuations, until 1905 and 1906 when the number reached 181,920 and 181,816, respectively. Since then there has been a general decrease, with the result that on April 1, 1912, the number was 161,608. Massachusetts is but one of a score of States where the number of cows has recently decreased. This condition, while alarming on the face of it, is not without compensation. From the very outset milk has been mainly produced as a by-product of general farming. Milk production for the general market has rarely stood upon a strictly independent paying basis. It is generally acknowledged that a given amount of nutrition in the form of milk has for years sold for a lower figure than that in other animal food products of similar nutritive ratio and digestibility. The natural result of this condition, added to the fact that our railroad laws are such as allow discrimination in favor of out-of-State milk, is that in those sections which have been shipping milk to the Boston market many have found the unprofitableness of the business too great to stand, and have, therefore, sold their herds. The production and marketing of clean milk, rich in solids, and bringing a price above that of general market milk, is the hope of the Massachusetts farmer so far as the Boston supply is concerned, and is what the most progressive farmers are striving for in all localities. With the growth of our cities and towns this near-by fresh milk is, and will be, more and more needed and used. The number of cows will cease decreasing only when that time arrives (in the not far distant future) when a sound business basis for dairying is established in this Commonwealth, — the condition most desired. Meanwhile, pasteurized milk and reduced milk in its various forms will continue to come from outside sources. But like counterfeit butter, which never reaches the quality of the best creamery product, this class of milk can never equal the pure, clean, raw, near-by product of the local dairymen. It is

gratifying to know that the demand for locally produced milk, at a price ranging from 1 to 2 cents per quart above that obtained for average market milk, is on the increase, and is being met each year by more farmers entering into its production. Elsewhere in this report will be found a list of farms making milk of this class as well as a list of those making certified milk in Massachusetts. It is hoped that by the end of another year many more farmers, so entitled, will be added to this list.

MILK CONSUMPTION.

For the first time since 1906 we are able to report a gain in the apparent consumption of fluid milk in Greater Boston. This is a good omen and indicative that the end of the scare crusade against milk is at hand. The milk question is being treated with more and more fairness by both the scientific world and the press. The pasteurization of general market milk (and some other milks) has probably been another factor in restoring confidence and arresting the declining use of this most desirable food product.

PRICE OF MILK.

The retail price of general market milk now varies in this State from 7 to 10 cents per quart, according to locality and conditions. Milk of superior quality and cleanliness, including inspected milk, sells for from 9 to 12 cents (in a few instances higher) per quart, and certified milk from 12 to 18 cents per quart. There has been thus far but small demand for certified milk in Massachusetts.

CONDENSED MILK.

In another part of this report there will be found figures showing the amount of wholesale trade in condensed and evaporated milk from Boston. As this is the first year any record of these goods has been kept no exact comparisons can be made. We are inclined to believe, however, that the increase of trade in condensed milk is not as great as occurred in the preceding two or three years.

LOCAL MILK INSPECTORS.

During the last few years a large number of local milk inspectors with splendidly equipped laboratories have been established in the various cities and towns in this Commonwealth. They are appointed by and are under the control of local boards of health. The character and ability of these men is noteworthy, and the work they are doing is highly creditable to the State. A complete list of these inspectors may be found in another part of this report.

OLEOMARGARINE.

The number of retail oleomargarine licenses in force in this State November, 1911, was 459, while in 1912 it was 846, showing an increase of 387. Oleomargarine receipts in Boston, as reported by the Chamber of Commerce in 1911, was 104,685 packages, while in 1912 it was 140,040, showing an increase of 35,355 packages. Oleomargarine produced in the United States in 1911 was 121,162,795 pounds, while in 1912 it was 128,601,053 pounds, showing an increase of 7,438,258 pounds. This increase in the manufacture and sale of oleomargarine is probably due to the high price of butter which has prevailed throughout the year.

So far as our agents have been able to discover no attempts to sell artificially colored oleomargarine have been made. For further details see tables on page 12.

RENOVATED BUTTER.

In 1911 there were 39,292,591 pounds of renovated butter produced in the United States, while in 1912 there were 46,387,398 pounds, showing an increase of 7,094,807 in twelve months, an increase also due to the prevailing high price of butter. See table on page 13.

BUTTER.

The annual statement of the Chamber of Commerce shows an increase in the consumption of butter during 1912 of but 398,597 pounds, figures much below the average increase and due undoubtedly to the average wholesale price of 31.2 cents per pound, the highest on record by at least 1 cent per pound. Details will be found in tables on pages 13 and 14.

LEGISLATION.

Last year this Bureau introduced a bill in the Legislature modifying the condensed milk law which was enacted in accordance with the suggestions offered. This year we find that the Bureau has reached the point where more money is needed to carry on its police and office work and to add to its efficiency in endeavoring to secure more satisfactory dairy conditions in Massachusetts. We therefore ask that section 12 of chapter 89 of the Revised Laws, as amended by chapter 416 of the Acts of 1908, be amended by striking out the word "eight" in the first line, and inserting in place thereof the word "ten", so that said section shall read as follows: —

SECTION 12. The bureau may expend not more than ten thousand dollars annually in its work, and it may co-operate with the state board of health and with inspectors of milk, but it shall not interfere with the duties of such board or officers. It shall annually, before the fifteenth day of January, report to the general court in detail the number of agents, assistants, experts and chemists employed by it, with their expenses and disbursements, of all investigations made by it, of all cases prosecuted with the results thereof, and other information advantageous to the dairy industry.

Also that section 2 of said chapter 416 be amended by striking out the word "eight" in the first line, and inserting in place thereof the word "ten", so that said section shall read as follows: —

SECTION 2. The said sum of ten thousand dollars shall be allowed from the first day of December, nineteen hundred and twelve.

PERSONNEL OF THE BUREAU.

The personnel of the Bureau is as follows: Charles M. Gardner of Westfield, chairman, George W. Trull of Tewksbury and Omer E. Bradway of Monson. The executive force, agents, chemists, etc., are as follows: executive officer and secretary, J. Lewis Ellsworth; general agent, P. M. Harwood; B. F. Davenport, M.D., of Boston, and F. W. Farrell of the Emerson Laboratory, Springfield, have done the chemical work; A. W. Lombard has continued to act as agent, and five others have been temporarily employed.

SUMMARY OF POLICE WORK.

Total number of inspections,	18,028
Number of inspections where no sample was taken,	5,968
Number of samples of butter, oleomargarine, and condensed milk, all purchased,	2,042
Number of samples of milk and cream,	124
Cases entered in court,	216
Addresses by general agent and others,	28

Cases prosecuted during the twelve months ending Nov. 30, 1912, by months and courts, with law violated, and results, are as follows:—

COURT.	Month.	Number.	Law violated.	Convicted.	Discharged.
Haverhill, Northern Essex District.	December, .	1	1 milk,	1	-
Lawrence Police,	December, .	2	2 renovated butter,	2	-
New Bedford, Third Bristol District.	December, .	6	6 oleomargarine,	6	-
Newton Police,	December, .	1	1 renovated butter,	1	-
Fall River, Second Bristol District.	December, .	4	2 renovated butter, 2 oleomargarine.	4	-
Lynn Police,	January, .	13	4 oleomargarine, 9 renovated butter.	13	-
Peabody Police,	January, .	2	2 oleomargarine,	2	-
Grafton, First Eastern Worcester District.	January, .	1	1 milk,	1	-
Haverhill, Northern Essex District.	January, .	35	12 oleomargarine, 23 renovated butter.	35	-
Hudson Police,	January, .	1	1 oleomargarine,	1	-
Haverhill, Northern Essex District.	January, .	4	2 renovated butter, 2 oleomargarine.	4	-
Worcester Central District,	January, .	2	2 oleomargarine,	2	-
Lynn Police,	February, .	8	8 oleomargarine,	8	-
Holyoke Police,	February, .	6	4 renovated butter, 2 oleomargarine.	6	-
North Adams, Northern Berkshire District.	February, .	20	10 oleomargarine, 10 renovated butter.	20	-
Pittsfield, Central Berkshire District.	February, .	4	4 oleomargarine,	4	-
Clinton, Second Eastern Worcester District.	March, .	4	2 renovated butter, 2 oleomargarine.	4	-
Southbridge, First Southern Worcester District.	March, .	1	1 milk,	1	-
Somerville Police,	March, .	2	2 oleomargarine,	2	-
Boston Municipal,	March, .	2	2 oleomargarine,	2	-
East Boston District, . . .	March, .	4	4 renovated butter,	4	-
Boston Municipal,	March, .	3	1 renovated butter, 2 oleomargarine.	3	-
Charlestown District Municipal.	March, .	2	2 oleomargarine,	2	-
Boston Municipal,	March, .	2	2 renovated butter,	2	-
Worcester Central District, .	April, . . .	2	2 oleomargarine,	2	-

¹ There were 106 extra samples taken during the year, therefore this number is less than the sum of the next three items.

COURT.	Month.	Num-ber.	Law violated.	Con- victed.	Dis- charged.
Lowell Police, . . .	April, . . .	31	9 renovated butter, 22 oleomargarine.	31	-
Gloucester, Eastern Essex District.	April, . . .	10	10 oleomargarine, .	10	-
Salem, First Essex District,	April, . . .	2	2 oleomargarine, .	2	-
Salem, First Essex District,	April, . . .	2	2 oleomargarine, .	2	-
South Boston District Municipal.	April, . . .	7	1 oleomargarine, 6 renovated butter.	7	-
Springfield Police, . . .	June, . . .	1	1 milk,	1	-
New Bedford, Third Bristol District.	June, . . .	4	4 renovated butter,	4	-
Gloucester, Eastern Essex District.	June, . . .	2	2 renovated butter,	2	-
Lawrence Police, . . .	June, . . .	10	8 oleomargarine, 2 renovated butter.	10	-
Lowell Police, . . .	July, . . .	1	1 oleomargarine, .	1	-
Springfield Police, . . .	August, . . .	1	1 milk,	1	-
Gardner, First Northern Worcester District.	August, . . .	1	1 milk,	1	-
Waltham, Second Eastern Middlesex District.	November, .	9	6 renovated butter, 3 oleomargarine.	9	-
Worcester, Central District,	November, .	2	2 renovated butter,	2	-
Northampton, Hampshire District.	November, .	1	1 milk,	1	-

NOTE. — The Bureau is indebted to the milk inspectors of Massachusetts for assistance which has resulted in court cases.

The charges in the several cases entered in court for the year ending Nov. 30, 1912, have been as follows: —

Selling renovated butter in unmarked packages,	88
Selling oleomargarine without being registered,	2
Selling oleomargarine in unmarked ¹ packages,	28
Furnishing oleomargarine in restaurants, etc., without notice to guests,	92
Selling milk containing added water,	6

216

The following table shows the inspections without samples, and the number of samples taken during the past ten years: —

YEARS.	Inspections without Samples.	Samples.
1903-11 (inclusive),	45,714	12,409
1912,	5,968	2,166
Total for ten years,	51,682	14,575
Average,	5,168	1,458

¹ In these cases oleomargarine was sold when butter was asked for, but the charge was made in this way for convenience.

TABLES RELATING TO OLEOMARGARINE.

The number of United States oleomargarine licenses in force in Massachusetts in November, 1911 and 1912 is as follows:—

	1911.	1912.
Wholesale licenses in Boston,	20	18
Wholesale licenses in other cities,	8	9
Total,	28	27
Retail licenses in Boston,	61	124
Retail licenses in other cities and towns,	398	722
Total,	459	846

The following figures, taken from the annual report of the United States Commissioner of Internal Revenue for 1912, show the production, withdrawn tax paid, and withdrawn for export of the two classes of oleomargarine, as defined by act of May 9, 1902, covering the period of ten years, since it went into effect on July 1, 1902:—

Oleomargarine (Pounds).

YEAR.	PRODUCT TAXED AT RATE OF 10 CENTS PER POUND.			PRODUCT TAXED AT RATE OF ¼ CENT PER POUND.		
	Produced.	With- drawn Tax paid.	With- drawn for Export.	Produced.	With- drawn Tax paid.	With- drawn for Export.
1903, . . .	5,710,407	2,312,493	3,334,969	67,573,689	66,785,796	151,693
1904, . . .	3,785,670	1,297,068	2,504,940	46,413,972	46,397,984	123,425
1905, . . .	5,560,304	3,121,640	2,405,763	46,427,032	46,223,691	137,670
1906, . . .	4,888,986	2,503,095	2,422,320	50,545,914	50,536,466	78,750
1907, . . .	7,758,529	5,009,094	2,695,276	63,608,246	63,303,016	129,350
1908, . . .	7,452,800	4,982,029	2,522,188	74,072,800	73,916,869	109,480
1909, . . .	5,710,301	3,275,968	2,403,742	86,572,514	86,221,310	112,958
1910, . . .	6,176,991	3,416,286	2,767,195	135,685,289	135,159,429	97,575
1911, . . .	5,830,995	2,764,971	3,054,344	115,331,800	115,448,006	91,750
1912, . . .	6,235,639	3,174,331	3,044,122	122,365,414	121,945,038	106,160
Totals, . .	59,110,622	31,856,975	27,154,859	808,596,670	805,937,605	1,138,811

TABLE RELATING TO RENOVATED BUTTER.

The following figures, from the same source as the preceding table, show the production and withdrawn tax paid of renovated butter, 1902-12: —

Renovated Butter (Pounds).

YEAR.	Production.	Withdrawn Tax paid.
1903,	54,658,790	54,223,234
1904,	54,171,183	54,204,478
1905,	60,029,421	60,171,504
1906,	53,549,900	53,361,088
1907,	62,965,613	63,078,504
1908,	50,479,489	50,411,446
1909,	47,345,361	47,402,382
1910,	47,433,575	47,378,446
1911,	39,292,591	39,352,445
1912,	46,387,398	46,413,895
Totals,	516,313,321	515,997,422

TABLES RELATING TO BUTTER.

The following table shows the average quotation for the best fresh creamery butter, in a strictly wholesale way, in the Boston market for the last ten years, as compiled by the Boston Chamber of Commerce: —

MONTH.	1912. Cents.	1911. Cents.	1910. Cents.	1909. Cents.	1908. Cents.	1907. Cents.	1906. Cents.	1905. Cents.	1904. Cents.	1903. Cents.
January,	36.9	28.8	33.5	30.9	29.7	30.4	25.2	28.0	22.7	28.0
February,	32.5	26.9	30.5	30.0	32.1	31.7	25.2	31.6	24.6	27.0
March,	32.1	24.2	32.0	29.1	30.2	30.2	25.5	28.0	24.1	27.0
April,	32.7	21.7	31.5	27.9	28.4	32.2	22.2	29.1	21.6	27.5
May,	30.4	22.8	29.0	26.6	24.1	31.4	19.9	23.9	19.9	22.5
June,	27.9	24.2	28.2	26.4	24.5	24.3	20.2	20.7	18.4	22.75
July,	28.1	26.0	28.6	27.2	23.6	25.9	21.0	20.6	18.3	20.5
August,	27.1	27.2	29.6	28.2	24.5	26.0	23.8	21.6	19.1	20.0
September,	29.1	27.7	29.6	31.3	25.3	29.2	25.6	21.2	20.8	22.0
October,	31.0	30.4	29.4	31.7	27.5	29.9	26.9	22.1	21.5	22.5
November,	32.9	32.5	30.2	31.4	29.5	27.1	27.6	23.0	24.1	23.5
December,	34.0	35.0	30.0	32.9	31.0	27.5	30.7	23.9	25.7	24.5
Averages,	31.2	27.3	30.2	29.5	27.5	28.8	24.48	24.47	21.73	23.97

The Chamber of Commerce figures regarding the butter business in Boston for 1911 and 1912 are as follows:—

	1912. Pounds.	1911. Pounds.
Carried over in storage,	6,612,966	12,272,624
Receipts for January,	3,282,660	2,058,615
February,	3,256,729	2,834,187
March,	3,565,555	3,290,750
April,	3,905,002	3,741,069
May,	7,003,321	6,070,694
June,	12,225,290	12,254,528
July,	13,030,718	8,282,768
August,	8,346,787	7,702,794
September,	6,051,810	6,288,939
October,	4,961,020	5,000,839
November,	3,717,156	3,329,460
December,	2,263,182	3,019,606
Total supply,	78,222,196	76,146,873
Exports for year, deduct,	24,005	74,446
Net supply,	78,198,191	76,072,427
Storage stock December 28, deduct,	8,340,132	6,612,966
Consumption for year,	69,858,059	69,459,461

RECEIPTS OF CONDENSED MILK.

The Chamber of Commerce figures regarding the receipts of condensed milk at Boston during 1912 are as follows:—

	Barrels.	Cases. ¹
January,	318	34,212
February,	174	32,066
March,	193	16,247
April,	375	20,614
May,	107	23,578
June,	187	27,080
July,	217	37,387
August,	146	44,461
September,	76	14,838
October,	262	22,240
November,	27	27,144
December,	222	22,079
Totals,	2,304	321,946

¹ Includes evaporated cream.

MILK.

Milk brought into Boston by Different Railroads, Dec. 1, 1911, to Nov. 30, 1912, as reported by the Railroad Commissioners (Quarts).

DATE.	Boston & Albany.	Boston & Maine.	New York, New Haven & Hartford.	Total.
1911.				
December,	957,011	5,684,134	1,681,167	8,322,312
1912.				
January,	699,099	5,640,697	1,746,433	8,086,229
February,	663,677	5,463,501	1,660,086	7,787,264
March,	778,999	5,959,732	1,798,682	8,537,413
April,	784,973	5,887,748	1,669,220	8,341,941
May,	999,002	5,926,088	1,609,096	8,534,186
June,	852,059	6,448,720	1,718,713	9,019,492
July,	1,323,508	6,389,101	1,468,410	9,181,019
August,	1,065,419	1,478,834	6,367,389	8,911,642
September,	1,044,702	6,622,503	1,446,076	9,113,281
October,	907,501	6,801,240	1,472,292	9,181,033
November,	1,114,468	6,534,098	1,354,856	9,003,422
Totals,	11,190,418	68,836,396	23,992,420	104,019,234

Receipts, 12 months ending Nov. 30, 1906, 114,233,976 quarts.
Receipts, 12 months ending Nov. 30, 1911, 90,092,772 quarts.

Comparative List of Number of Cows assessed in Massachusetts, May 1, 1906, and April 1, 1912.

COUNTIES.	1906.	1912.	Decrease.	Increase.
Barnstable,	2,448	2,305	143	—
Berkshire,	17,404	16,463	941	—
Bristol,	13,702	13,552	150	—
Dukes,	656	583	73	—
Essex,	17,131	14,529	2,602	—
Franklin,	12,715	11,941	774	—
Hampden,	12,096	10,504	1,592	—
Hampshire,	14,383	12,261	2,122	—
Middlesex,	29,508	25,932	3,576	—
Nantucket,	378	419	—	41
Norfolk,	11,200	10,095	1,105	—
Plymouth,	8,465	7,765	700	—
Suffolk,	1,186	1,015	171	—
Worcester,	40,544	34,244	6,300	—
Totals,	181,816	161,608	20,249	41

Net decrease, 20,208
Average net decrease per annum, 3,368

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price.

LOCATION, FARM.	Owner, Manager.	Approximate Number of Cows.	Where marketed.
Agawam, Reilly Farm, . . .	J. J. Reilly, owner and manager.	17	Springfield. ¹
Agawam, Colonial Farm, . . .	H. E. Bodurtha, owner and manager.	10	Springfield.
Agawam, Elm Shade Dairy, . . .	S. S. Bodurtha, owner and manager.	25	Springfield.
Agawam, Glen Farm, . . .	W. H. Seaver, owner and manager.	12	Springfield.
Andover, Shattuck Farms, . . .	F. Shattuck, owner and manager.	50	Lawrence.
Barre, Highland View Farm, . . .	D. A. Howe, owner, G. E. Farnsworth, manager.	20	Worcester.
Brookfield, Belding Farm, . . .	W. C. Belding, owner, L. L. Belding, manager.	15	Springfield.
Caryville, Dudley B. Fowler's farm.	Dudley B. Fowler, owner and manager.	20	Boston, by C. Brigham Company.
Charles River, Walker-Gordon Farm.	Walker-Gordon Laboratory Company, owner, Charles H. Walker, manager.	100	Boston.
Cohasset, The Oaks Farm, . . .	C. W. Barron, owner, W. E. Stilwell, manager.	83	Boston.
Dighton, Ralph Earle's farm, . . .	Ralph Earle, owner and manager.	15	Fall River. ²
Dorchester, Codman Farm, . . .	Watson B. Fearing, owner and manager.	58	Boston.
Framingham, Millwood Farm, . . .	Mrs. E. F. Bowditch, owner, J. P. Bowditch, manager, F. E. Barrett, superintendent.	190	Boston and Wellesley.
Franklin, Ray Farm, . . .	E. K. Ray, estate, owner, Joseph G. Ray, trustee, manager.	100	Boston, by Elm Farm Company.
Gloucester, Howard P. Lane's farm.	Howard P. Lane, owner and manager.	50	Gloucester.
Gloucester, H. Wallace Lane's farm.	H. Wallace Lane, owner and manager.	30	Gloucester.
Gloucester, Peter Hadstrom's farm.	Peter Hadstrom, owner and manager.	6	Gloucester.
Grafton, D. E. Hallett's farm, . . .	D. E. Hallett, owner and manager.	40	Boston, by C. Brigham Company.
Granby, C. W. Ball's farm, . . .	C. W. Ball, owner and manager.	29	Holyoke.
Greenfield, Wayside Farm, . . .	Frank H. Reed, owner, Mr. Purrington, manager.	25	Greenfield.
Hamilton, Miles River Farm, . . .	Maxwell Norman, owner and manager.	100	Boston.
Hardwick, Mixter Farm, . . .	Mary A. Mixter, owner, Dr. Samuel J. Mixter, manager, S. R. Parker, Superintendent.	165	Boston.
Haverhill (Bradford District), Cedar Crest Farm.	C. Herbert Poor, owner and manager.	20	Haverhill. ³
Haverhill, North Broadway Milk Farm.	E. A. Emerson, owner and manager.	35	Haverhill.
Haverhill (P. O. East Haverhill), Leonard H. Kimball's farm.	Leonard H. Kimball, owner and manager.	35	Haverhill.
Holliston, W. E. Marchant's farm.	W. E. Marchant, owner and manager.	12	Boston, by C. Brigham Company.
Holyoke, Whiting Farm, . . .	W. F. Whiting, owner, John F. Richardson, manager.	20	Holyoke.
Longmeadow, Hillbrow Farm, . . .	H. M. Burt, owner and manager.	20	Springfield.

¹ Several out-of-State farms also furnish milk of this class in Springfield.

² Several Rhode Island farms also furnish milk of this class in Fall River.

³ Two New Hampshire dairymen, Geo. B. Freeman and Herbert N. Sawyer, also sell milk of this class in Haverhill.

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price — Concluded.

LOCATION, FARM.	Owner, Manager.	Approximate Number of Cows.	Where marketed.
Lowell, Hood Farm, . . .	C. I. Hood, owner, J. E. Dodge, manager.	120	Lowell.
Lunenburg, George M. Proctor's farm.	Geo. M. Proctor, owner, Fred A. Miller, manager.	48	Fitchburg.
Marlborough, Fairview Farm, .	Elmer D. Howe & Son, owners and managers.	40	Marlborough.
Medford, Hillside Farm, 20 Gow Street.	Alberton Harris, owner and manager.	10	Medford.
Medford, Mystic Valley Farm, 75 Arlington Street.	John J. Mulkevin, owner and manager.	16	Medford.
Methuen, Bragdon Farms, .	E. L. Bragdon, owner and manager.	30	Lawrence.
Methuen, Chestnut Grove Farm,	F. L. Gardner, owner and manager.	16	Lawrence.
Methuen, Cox Farms, . . .	Louis Cox, owner, L. Coburn, manager.	31	Lawrence.
Methuen, Howe Farm, . . .	E. D. Taylor, owner and manager.	50	Lawrence.
Methuen, Spring Valley Farms,	Fred Miller, owner and manager.	50	Lawrence.
Methuen, S. W. Williams' farm,	S. W. Williams, owner and manager.	30	Lawrence.
Millis, Lowland Farm, . . .	E. F. Richardson, owner and manager.	25	Boston.
Peabody, Maplehill Farm, .	- - -	-	Boston, by H. P. Hood & Sons. ¹
Pittsfield, E. W. Page's farm, .	E. W. Page, owner and manager.	8	Pittsfield.
Pittsfield, Mr. Bardwell's farm,	Mr. Bardwell, owner and manager.	14	Pittsfield.
Pittsfield, Abby Lodge, . . .	A. W. Cooley, owner, Mr. Carlson, manager.	14	Pittsfield.
Reading, Elm Hill Farm, .	Allen C. Jones, owner and manager.	35	Boston.
Saugus, Oaklandale Farm, .	Frank P. Bennett, owner and manager.	50	Lynn.
South Lincoln, South Lincoln Dairy Company.	South Lincoln Dairy Company, owners, W. A. Blodgett, manager.	250	Boston.
Sterling, Twin Oaks Farm (P. O. Pratt's Junction).	J. F. Pratt, owner, Geo. E. Pratt, manager.	75	Milk, Boston; cream, Worcester.
Westwood, Fox Hill Farm, .	Joshua Crane, owner, L. W. Jackman, manager.	100	Boston.
West Newton and Barre, Wauwinet Farm.	Geo. H. Ellis, owner, P. F. Staples and R. M. Hardy, managers.	400	Boston, Brookline and Newton.
Worcester, Pleasant View Farm,	Warren C. Jewett, owner and manager.	40	Worcester.
Worcester,	Lewis J. Kendall, owner and manager.	40	Worcester.
Worcester, Intervale Farm, .	J. Lewis Ellsworth, owner and manager.	14	Worcester.
Worcester, Village Farm, . .	H. B. Prentice, owner and manager.	30	Worcester.

¹ H. P. Hood & Sons also distribute this class of milk from 10 farms in New Hampshire.

NOTE. — Deerfoot Farm Dairy, office 9 Bosworth Place, Boston, with milk depots at both Southborough and Northborough, sells milk of superior quality and cleanliness at a price above that of ordinary market milk, and handles the product of 129 dairy farms, averaging about 10 cows each, located in Southborough, Northborough, Westborough and Holliston. Most of these farms, therefore, at some time during the year come properly within the requirements of this list. The method of payment of this milk is explained in the following extract from a letter from the proprietor, Mr. Robert M. Burnett: "The milk from all our farms is tested once or twice a week on delivery at the dairy, samples being taken by Professor Prescott's agent. When the milk is found to contain below 25,000 bacteria per

cubic centimeter, and cows, feed, water and stable conditions are reported by Dr. J. W. Robinson as healthful and satisfactory, and the average test is not lower than $4\frac{1}{2}$ per cent. butter fat, the price paid is 50 cents per can at the Deerfoot Dairy for the full yield all the year around. For any milk passing the above conditions, of good quality, testing below $4\frac{1}{2}$ per cent. butter fat, we pay 45 cents per can for such proportion as we can bottle. For the balance of the milk not bottled, and for the milk from farms not meeting the conditions required for bottled milk, we pay the price agreed upon between the Milk Producers Association and the Contractors Union. For the month of December, 1912, this compact was with 129 farms averaging about 10 cows to the farm."

The foregoing list is necessarily incomplete owing to the fact that all returns had not been received at the close of the year.

List of Massachusetts Dairy Farms making Certified Milk.

NAME, LOCATION.	Owner, Manager.	Approximate Number of Cows.	Certified by —	Where marketed.
Cedar Hill Farm, Waltham.	Miss Cornelia Warren, Charles Cahill.	215	Cambridge Medical Commission.	Waltham, Cambridge, Boston.
Cedarcrest Farm, Waltham.	John C. Runkle, Louis W. Dean.	90	Cambridge Medical Commission.	North Shore, Cambridge, Brookline, Boston.
Ledyard Farm, Andover.	J. A. & W. H. Gould,	50	Malden Medical Commission.	Malden.
Massachusetts Agricultural College Farm, Amherst. ¹	Massachusetts Agricultural College Farm, J. A. Foord.	50	Suffolk District Medical Commission.	Boston.
Prospect Hill Farm, Essex.	J. A. & W. H. Gould,	175	Suffolk District Medical Commission.	Boston, Beverly.
"The Warelands," Highland Lake, Norfolk. ²	Mrs. Charlotte B. Ware.	30	Suffolk District Medical Commission.	Boston.
W. C. White's Farm, Acushnet.	Walter C. White,	28	New Bedford Medical Commission.	New Bedford.

¹ This milk is distributed by D. Whiting & Son.

² "The Warelands" was first in New England to produce certified milk.

NOTE. — H. P. Hood & Sons distribute certified milk from their Hood Farm, Derry, N. H.; also from Middlebrook Farm, owned by Miss Elizabeth C. Sawyer, Dover, N. H.

LIST OF LOCAL MILK INSPECTORS.

Milk Inspectors for Massachusetts Cities, 1912.

Beverly,	Henry E. Dodge, 2d.
Boston,	Prof. James O. Jordan.
Brockton,	George E. Bolling.
Cambridge,	Dr. W. A. Noonan.
Chelsea,	Dr. W. S. Walkley.
Chicopee,	C. J. O'Brien.
Everett,	E. Clarence Colby.
Fall River,	Henry Boisseau.
Fitchburg,	John F. Bresnahan.
Gloucester,	Dr. George E. Watson.
Haverhill,	C. Biscault.

Holyoke,	Daniel P. Hartnett.
Lawrence,	Dr. J. H. Tobin.
Lowell,	Melvin F. Master.
Lynn,	George A. Flanagan.
Malden,	J. A. Sandford.
Marlborough,	John J. Cassidy.
Medford,	Winslow Joyce.
Melrose,	Caleb W. Clark, M.D.
New Bedford,	Herbert B. Hamilton, D.V.S.
Newburyport,	Dr. R. D. Hamilton.
Newton,	Arthur Hudson.
North Adams,	Henry A. Tower.
Northampton,	George R. Turner.
Pittsfield,	Eugene L. Hannon.
Quincy,	Edward J. Murphy.
Salem,	John J. McGrath.
Somerville,	Herbert E. Bowman.
Springfield,	Stephen C. Downs.
Taunton,	Lewis I. Tucker.
Waltham,	Arthur E. Stone, M.D.
Woburn,	Edward P. Kelly, M.D.
Worcester,	Gustaf L. Berg.

Milk Inspectors for Massachusetts Towns, 1912.

Adams,	Dr. A. G. Potter.
Amesbury,	E. S. Worthen.
Andover,	Franklin H. Stacey.
Arlington,	Dr. L. L. Pierce.
Attleborough,	Caleb E. Parmenter.
Barnstable,	George T. Mecarta.
Belmont,	Prof. Samuel C. Prescott.
Brookline,	Frederick H. Osgood.
Clinton,	Gilman L. Chase.
Cohasset,	D. W. Gilbert, D.V.S.
Concord,	Erastus H. Smith.
Easthampton,	George L. McEvoy.
Gardner,	Clifford W. Shippee.
Greenfield,	George P. Moore.
Hudson,	Dr. A. L. Cundall.
Leominster,	William H. Dodge.
Ludlow,	A. L. Bennett, D.V.S.
Millbury,	Arthur A. Brown.
Milton,	W. C. Tucker.
Monson,	Dr. E. W. Capen.
North Attleborough,	Hugh Gaw, V.S.
Palmer,	Edward P. Brown.

Peabody,	H. S. Pomery, M.D.
Plainville,	John C. Eiden.
Reading,	C. H. Playden, M.D.
Revere,	Joseph E. Lamb.
Salisbury,	John H. Pike.
South Framingham,	Dr. J. H. McCann.
South Hadley Falls,	George F. Boudreau.
Spencer,	James A. Spencer.
Stoneham,	George H. Allen.
Wakefield,	Harry A. Simonds.
Ware,	Fred E. Marsh.
Watertown,	Luther W. Simonds.
Wellesley,	Cecil K. Blanchard.
Westfield,	William H. Porter.
West Springfield,	Norman T. Smith.
Williamstown,	G. S. Jordan, V.S.
Winchendon,	Dr. G. W. Stanbridge.
Winchester,	Morris Dineen.

CREAMERIES, MILK DEPOTS, ETC.

Co-operative Creameries.

NUMBER AND LOCATION.	Name.	Superintendent or Manager.
1. Ashfield,	Ashfield Creamery,	William Hunter, manager.
2. Belchertown,	Belchertown Creamery,	M. G. Ward, president.
3. Cummington,	Cummington Creamery,	D. C. Morey, superintendent.
4. Easthampton,	Hampton Creamery,	W. H. Wright, treasurer.
5. Egremont (P. O. Great Barrington),	Egremont Creamery,	E. G. Tyrell, manager.
6. Monterey,	Berkshire Hills Creamery,	F. A. Campbell, treasurer.
7. Shelburne,	Shelburne Creamery,	Ira Barnard, manager.
8. Westfield,	Wyben Springs Creamery,	C. H. Kelso, manager.

Proprietary Creameries.

NUMBER AND LOCATION.	Name.	Owner or Manager.
1. Amherst,	Amherst Creamery Company,	R. W. Pease, manager.
2. Amherst,	Fort River Creamery,	Clarence M. Wood, manager (estate of E. A. King, owner).
3. Brimfield,	Crystal Brook Creamery,	F. N. Lawrence, proprietor.
4. Groton,	Lawrence Creamery,	Myron P. Swallow, manager.
5. Heath,	Cold Spring Creamery,	I. W. Stetson & Son.
6. Hinsdale,	Hinsdale Creamery,	Walter C. Solomon, proprietor.
7. Marlborough,	Este's Creamery,	F. F. Este, proprietor.

Educational.

LOCATION.	Name.	Manager.
Amherst,	Dairy Industry Course, Massachusetts Agricultural College.	W. P. B. Lockwood, professor in charge.

Principal Milk-distributing Depots.

NAME.	Location.	Manager.
Alden Brothers Company, Oak Grove Farm, Waumersit Farm.	Boston office, 1171 Tremont Street, depot, 24-28 Duncan Street.	Charles L. Alden, president, John Alden, treasurer.
Anderson Brothers, . . .	Worcester, Eckman Street, . . .	Anderson Bros.
Boston Condensed Milk Company.	Boston, 484 Rutherford Avenue, .	W. A. Graustein.
Brigham, C., Company, . .	Cambridge, 158 Massachusetts Avenue.	John K. Whiting.
Brigham, C., Company, . .	Worcester, 9 Howard Street, . . .	C. Brigham Company.
Deerfoot Farms Dairy, . .	Boston office, 9 Bosworth Street, depots at Northborough and Southborough.	S. H. Howes.
Elm Farm Milk Company,	Boston, Wales Place,	James H. Knapp, treasurer.
Hood, H. P., & Sons, . . .	Boston, 494 Rutherford Avenue; branches, 24 Anson Street, Forest Hills, 886 Broadway, Chelsea. Lynn, 193 Alley Street, Malden, 425 Main Street, . . . Watertown, 479 Pleasant Street, . Lawrence, 629 Common Street, .	Charles H. Hood.
Learned, G. S. (Fitchburg Creamery).	Fitchburg, 26 Cushing Street, . .	G. S. Learned.
Newhall, J. A.,	Newburyport, 32 Munroe Street, .	J. A. Newhall.
Perry, A. D.,	Worcester, Kansas Street, . . .	A. D. Perry.
Prentice, H. H., & Co. (Berkshire Creamery).	Pittsfield, Crane Avenue, . . .	H. H. Prentice.
Somers Creamery Company,	Springfield, 178 Dwight Street, .	W. M. Cushman.
Springfield Creamery, . .	Springfield, Main Street, . . .	F. B. Allen, proprietor.
Tait Brothers,	Springfield, 37 Vinton Street, . .	Tait Brothers, proprietors.
Wachusett Creamery, . . .	Worcester, 6 Lincoln Street, . . .	E. H. Thayer & Co., proprietors.
Whiting, D., & Sons, . . .	Boston, 570 Rutherford Avenue, .	George Whiting.

Milk Laboratory.

Walker-Gordon Laboratory,	Boston, 793 Boylston Street, . . .	George W. Franklin.
---------------------------	------------------------------------	---------------------

Receiving Depots for Milk, for Shipments to New York City.

The Borden Company of New York.	West Stockbridge,	Thomas Roberts.
Willow Brook Dairy Company.	Sheffield,	Frank Percy.

EXPENSES.

The following is a classified statement of the expenses for the year ending Nov. 30, 1912: —

Bureau: compensation and traveling expenses,	\$609 61
Agents: compensation,	2,565 00
Agents: traveling expenses and samples purchased,	2,924 91
General agent: traveling and necessary expenses,	422 38
Chemists: analyses, tests, court attendance,	1,099 68
Printing and supplies,	289 03
Educational,	89 39
<hr/>	
Total,	\$8,000 00

P. M. HARWOOD,
General Agent.

Accepted and adopted as the report of the Dairy Bureau.

CHARLES M. GARDNER.
GEORGE W. TRULL.
OMER E. BRADWAY.

1913
B

TWENTY-THIRD ANNUAL REPORT

OF THE

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 15, 1914.



BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
32 DERNE STREET.

1914.

TWENTY-THIRD ANNUAL REPORT

OF THE

Mass!

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 15, 1914.



BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
32 DERNE STREET.

1914.

APPROVED BY
THE STATE BOARD OF PUBLICATION.

614.32M3

D132

1913

B

DAIRY BUREAU—1913.

CHARLES M. GARDNER, WESTFIELD, *Chairman.*

GEORGE W. TRULL, TEWKSBURY, P. O. LOWELL, R. F. D.

OMER E. BRADWAY, MONSON, MASS.

Secretary.

J. LEWIS ELLSWORTH, *Executive Officer and Secretary of the
State Board of Agriculture to May 1, 1913.*

WILFRID WHEELER, *Executive Officer and Secretary of the
State Board of Agriculture from May 1, 1913.*

General Agent.

P. M. HARWOOD.

ADDRESS, ROOM 136, STATE HOUSE, BOSTON.

The Commonwealth of Massachusetts.

REPORT OF THE DAIRY BUREAU.

The work of the Bureau for the year 1913 has been augmented by additional duties attendant upon the carrying out of the resolve of the Legislature for the encouragement of practical dairying. By vote of the Board of Agriculture this work was given over to its Dairy Bureau. The resolve reads as follows:—

CHAPTER 96, ACTS OF 1913.

RESOLVE TO PROVIDE FOR THE ENCOURAGEMENT OF DAIRYING AND THE PRODUCTION OF MILK AND DAIRY PRODUCTS OF SUPERIOR QUALITY.

Resolved, That the state board of agriculture is hereby authorized to provide for the encouragement of practical dairymen in the production of milk and dairy products of superior quality and cleanliness, by offering prizes for the best kept stables, the lowest bacteria counts and best quality of milk, or otherwise, as the board may determine; by demonstrations illustrating the best methods of dairying; by agents who shall instruct the citizens of the commonwealth in matters of stable construction and management and dairy methods in general; by the distribution of literature giving information in regard to the best methods of dairying and especially in regard to the production of clean milk; or in such other manner as the board may deem best for the encouragement of dairying and the production of clean milk. For travelling, incidental, administrative and office expenses necessarily incurred in carrying out the purposes of this resolve the said board may expend a sum not exceeding five thousand dollars annually for three years, beginning with the year nineteen hundred and thirteen, and if any part of the said five thousand dollars remains unexpended at the close of any one year, the balance may be expended in the following year. [Approved May 26, 1913.]

This work — encouragement of practical dairying — opens up a field of great interest. During recent years, in milk-shipping sections of the State, many farmers have either curtailed their business, given up milk production,¹ sold their farms or changed their system of farming. The farms when sold have usually gone into the hands of city people for country homes or for so-called fancy farming. Poles and other immigrants have not purchased dairy farms to any extent, preferring the onion and tobacco farms of the Connecticut valley or truck farms adjacent to large cities.

We are of the opinion that the great hope for the future of Massachusetts dairying lies in the production of clean, wholesome milk for near-by markets for a price higher than that paid for railroad market milk from northern New York, northern New England and Canada, which cannot be safely sold without pasteurization. Whatever may be done in the way of inspection and supervision in the future, long-hauled milk sold in large cities will continue to be pasteurized, — or treated in some equal or superior manner, — in order that the public health may be safeguarded and the milk contractors and dealers protected. We believe that inspection of dairies, while necessary and important, is frequently overestimated in the public mind, and that the real good that comes from these inspections is the simple removal of unsound animals and of unsanitary conditions without frills, fads and unnecessary requirements. Dairy inspection is not a guarantee of cleanliness. The best way in which clean milk can be secured from dairies three hundred and sixty-five days in the year is to pay for it on the basis of cleanliness and freedom from contamination.

With the limited sum of \$5,000 per annum at our disposal, we cannot do all that we would like. In fact, we can only make a beginning in a few ways. We believe that by encouragement and incidental instruction, habits of dairy-men, however good, can be improved. In carrying out this idea we have during the year offered prizes aggregating \$3,000, \$2,550 of which was for clean milk, and \$450 for the protection of dairies from flies. For convenience, the State

¹ In 1890 there were assessed in Massachusetts 200,658 cows; in 1906, 181,816 cows; in 1912, 161,608; and in 1913, 151,276 cows. This shows a decrease, from 1890 to 1913, of 49,382 cows, from 1906 to 1913, of 30,540; and from 1912 to 1913, of 10,332.

was divided into two sections, — eastern and western. In the eastern section there were 37 entries. These dairies were examined in the month of September. Answers to pertinent questions were obtained, photographs of premises taken, and samples of milk run through absorbent cotton, and the cottons examined later for sediment. The prizes were awarded September 30 and were made public at the Brockton Fair. In the western section there were 114 entries. These dairies were examined in the month of October and the prizes awarded later. The names of the winners were announced at the State Board of Agriculture meeting at Springfield, December 1. In the contest for dairies best protected from flies there were 18 entries. These dairies were examined early in October, and the announcement of the prizes was made at the Springfield meeting. So far as we know, these were the first prizes ever offered along these lines, but the results have exceeded our most sanguine expectations. The successful contestants have cheerfully signed the following expression of determination: —

Consideration of the generosity of the Commonwealth in offering liberal prizes for the production of clean milk, together with my own interest in the matter, leads me to express my determination to continue the means adopted in this contest, and to add thereto from time to time such improvements as appear practical, to the end that the present high standing of Massachusetts milk may be maintained and its quality improved.

Many contestants have voluntarily stated that they learned more about the production of clean milk in this contest than they ever knew before.

For details in the protection from flies contest, reference is made to Circular No. 10 of the series now being published by the State Board of Agriculture. Further details in regard to the clean milk contest will be found in Circular No. 13 of the same series.

It is hoped that during the coming year even more far-reaching results may be realized from plans already in contemplation.

The Bureau takes this opportunity to express its appreciation and thanks for the services of Prof. Samuel C. Prescott of the Massachusetts Institute of Technology,

and Mr. E. H. Forbush of the State Board of Agriculture, as judges who acted without pay in the clean milk and protection from flies contests, respectively; also to milk inspectors S. C. Downs and J. A. Gamble of Springfield, G. L. Berg of Worcester, Fred E. Marsh of Ware, Clifford W. Shippee of Gardner, and others who did much to awaken local interest, besides furnishing valuable assistance in the clean milk contest; also to Mr. Fred F. Walker, Commissioner of Animal Industry, and the inspectors of animals throughout the Commonwealth, for valuable assistance in obtaining information relating to the dairymen in Massachusetts.

The police work of the Board for 1913 has resulted in 149 cases in court and 146 convictions. Seven of these cases were for violation of the milk laws, 54 for the violation of the renovated butter law and 88 for the violation of the oleomargarine laws.

In the educational work, 17 lectures have been given by the general agent. These lectures have explained the food value of milk, advocated its increased consumption and more economical distribution, and that its price be based upon quality and cleanliness. We believe these to be among the basic essentials in bringing to dairymen a more prosperous condition, and to consumers greater security in their milk supply. Most of the creameries, and many dairy plants in the State, have been visited during the year, and special exhibits of the work of the Bureau were made at Brockton and Springfield.

Bulletins on "Dairying in Denmark," edited by P. M. Harwood, "Cost of Milk Production," by Prof. Fred Rasmussen, "What it Costs to produce Milk in New England," by P. M. Harwood, with extracts from special articles by Mr. Elmer D. Howe, Prof. John M. Trueman, Prof. Fred Rasmussen, and Dr. Joseph B. Lindsey, have been published, and statistics relating to milk producers and breeders of pure-bred dairy stock have been gathered.

Early in the year the general agent was appointed by the Governor, together with Dr. Mark W. Richardson of the State Board of Health and Gen. Charles W. Wood of Worcester, to attend a milk conference in New York. This conference

voted that the main control of the milk business should remain in the hands of the agricultural departments of the several States represented, and the milk inspection divided between agricultural and health authorities. Later in the year the general agent was appointed by the governor to attend a conference of the United States department and State departments for bringing about more uniform laws and regulations in the control of dairy and food supplies.

MILK CONSUMPTION.

It is gratifying to know that the consumption of milk in Greater Boston is gradually increasing from the low ebb reached in 1911. The figures of the Massachusetts Board of Railroad Commissioners show the receipts of railroad milk to be 107,306,849 quarts. (See table on page 16.)

CONDENSED MILK.

The Chamber of Commerce gives receipts of condensed milk, including evaporated cream in Boston for 1913, as 3,484 barrels and 321,883 cases, as against 2,304 barrels and 321,946 cases in 1912. This indicates but slight increase in the consumption of these products during the year. (See table on page 16.)

MILK INSPECTORS.

The number of milk inspectors in the State has been increased during the year, and their high reputation for efficiency maintained. Our thanks are due to many for their kindly co-operation and assistance at all times. A list of these inspectors will be found on pages 21-23.

OLEOMARGARINE.

The number of retail oleomargarine licenses in force in the State November, 1912, was 846, while in 1913 it was 884, showing an increase of 38 oleomargarine licenses in Boston. As reported by the Chamber of Commerce in 1912, it was 140,040 packages, while in 1913 it was 127,994, showing a decrease of 12,046. Oleomargarine produced in the

United States in 1912 was 128,601,053 pounds, while in 1913 it was 145,227,872, showing an increase of 16,626,829. This increase in the manufacture of oleomargarine, and its apparent increased consumption in the United States, is undoubtedly due to the high cost of living, but the decrease in number of packages of oleomargarine wholesaled in Boston, together with the but slight increase in number of Massachusetts licenses, indicates that the majority of people in this State still prefer to use genuine butter. (For further details, see tables on page 13.)

RENOVATED BUTTER.

In 1912 there were 46,387,398 pounds of renovated butter produced in the United States, while in 1913 there were 38,354,762, showing a decrease of 8,032,636 pounds in twelve months, which indicates a decline of these goods in public favor. (See table on page 14.)

BUTTER.

The annual statement of the Boston Chamber of Commerce shows an increase in the consumption of butter, Boston output, during 1913 of 1,312,224 pounds, which is a fairly normal increase. The average wholesale price of 31.7 cents for the year, against 31.2 cents for 1912, has had no apparent effect upon the butter consumption. (Details will be found on pages 14 and 15.)

PERSONNEL OF THE BUREAU.

The personnel of the Bureau is as follows: Charles M. Gardner of Westfield, chairman, George W. Trull of Tewksbury and Omer E. Bradway of Monson. The executive force, agents and analysts, etc., are as follows: executive officer and secretary, Wilfred Wheeler;¹ general agent, P. M. Harwood; analysts, B. F. Davenport, M.D., Boston, and F. W. Farrell, Emerson Laboratory, Springfield; agent, A. W. Lombard; and five others have been temporarily employed.

¹ Since May 1, 1913.

SUMMARY OF POLICE WORK.

Total number of inspections,	18,161
Number of inspections where no samples were taken,	4,609
Number of samples of butter, oleomargarine and condensed milk, all purchased,	3,458
Number of samples of milk and cream,	94
Cases entered in court,	14
Addresses by general agent and others,	17

Cases prosecuted during the twelve months ending Nov. 30, 1913, by months and courts, with law violated, and results, are as follows: —

COURT.	Month.	Number.	Law violated.	Con- victed.	Dis- charged.
Lynn Police,	December, .	4	4 renovated butter,	4	—
Malden, First Eastern Mid- dlesex District.	December, .	2	2 oleomargarine, .	2	—
Gloucester, Eastern Essex District.	December, .	2	2 oleomargarine, .	2	—
Worcester, Central District,	December, .	4	4 oleomargarine, .	4	—
New Bedford, Third Bristol District.	January, .	38	18 renovated butter, 20 oleomargarine.	34	4
Holyoke Police,	January, .	3	3 oleomargarine,	3	—
Lawrence Police,	February, .	16	6 renovated butter, 10 oleomargarine.	16	—
East Brookfield, Western Worcester District.	March, .	2	2 renovated butter,	2	—
Salem, First Essex District,	March, .	2	2 oleomargarine, .	2	—
Lynn Police,	March, .	6	2 renovated butter, 4 oleomargarine.	6	—
Worcester, Central District,	March, .	7	1 renovated butter, 6 oleomargarine.	7	—
Webster, First Southern Worcester District.	March, .	4	4 renovated butter,	4	—
Boston Municipal,	April, .	2	2 oleomargarine, .	2	—
Haverhill, Northern Essex District.	April, .	16	8 renovated butter, 8 oleomargarine.	16	—
Athol, First Northern Worcester District.	April, .	4	4 oleomargarine, .	4	—
Gardner, First Northern Worcester District.	April, .	7	3 renovated butter, 4 oleomargarine.	7	—
Boston Municipal, Charles- town District.	April, .	1	1 oleomargarine, .	1	—
Springfield Police,	April, .	3	3 oleomargarine, .	3	—
Boston Municipal, Brighton District.	May, .	2	2 renovated butter,	2	—
Lowell Police,	May, .	7	7 oleomargarine, .	7	—
Salem, First Essex District,	May, .	2	2 renovated butter,	2	—
Worcester, Central District,	May, .	2	2 cream, . . .	2	—
Worcester, Central District,	June, .	1	1 cream, . . .	1	—

¹ There were 79 extra samples taken during the year, therefore this number is less than the sum of the next three items.

Court.	Month.	Number.	Law violated.	Convicted.	Discharged.
Haverhill, Northern Essex District.	July, . . .	2	2 cream, . . .	2	-
Lawrence Police, . . .	November, .	4	2 milk, 2 oleomargarine.	4	-
Quincy, East Norfolk District.	November, .	2	2 renovated butter,	2	-
Chelsea Police, . . .	November, .	2	2 oleomargarine, .	2	-

NOTE. — The Bureau is indebted to the milk inspectors of Massachusetts for assistance which has resulted in court cases.

The charges in the several cases entered in court for the year ending Nov. 30, 1913, have been as follows: —

Selling renovated butter in unmarked packages,	54
Selling oleomargarine without being registered,	3
Selling oleomargarine in unmarked ¹ packages,	11
Furnishing oleomargarine in restaurants, etc., without notice to guests,	73
Selling milk below standard,	2
Selling cream below standard,	5
Selling oleomargarine without sign in store,	1

149

The following table shows the inspections without samples, and the number of samples taken during the past eleven years: —

YEARS.	Inspections without Samples.	Samples.
1903-12 (inclusive),	51,682	14,575
1913,	4,609	3,552
Total for eleven years,	56,291	18,127
Average,	5,117	1,647

¹ In these cases oleomargarine was sold when butter was asked for, but the charge was made in this way for convenience.

TABLES RELATING TO OLEOMARGARINE.

The number of United States oleomargarine licenses in force in Massachusetts in November, 1912 and 1913, is as follows: —

	1912.	1913.
Wholesale licenses in Boston,	18	19
Wholesale licenses in other cities,	9	12
Totals,	27	31
Retail licenses in Boston,	124	121
Retail licenses in other cities and towns,	722	763
Totals,	846	884

The following figures, taken from the annual report of the United States Commissioner of Internal Revenue for 1913, show the production, withdrawn tax paid, and withdrawn for export of the two classes of oleomargarine, as defined by act of May 9, 1902, covering the period of eleven years, since it went into effect on July 1, 1902: —

Oleomargarine (Pounds).

YEAR.	PRODUCT TAXED AT RATE OF 10 CENTS PER POUND.			PRODUCT TAXED AT RATE OF ¼ CENT PER POUND.		
	Produced.	With- drawn Tax paid.	With- drawn for Export.	Produced.	With- drawn Tax paid.	With- drawn for Export.
1903,	5,710,407	2,312,493	3,334,969	67,573,689	66,785,796	151,693
1904,	3,785,670	1,297,068	2,504,940	46,413,972	46,397,984	123,425
1905,	5,560,304	3,121,640	2,405,763	46,427,032	46,223,691	137,670
1906,	4,888,986	2,503,095	2,422,320	50,545,914	50,536,466	78,750
1907,	7,758,529	5,009,094	2,695,276	63,608,246	63,303,016	129,350
1908,	7,452,800	4,982,029	2,522,188	74,072,800	73,916,869	109,480
1909,	5,710,301	3,275,968	2,403,742	86,572,514	86,221,310	112,958
1910,	6,176,991	3,416,286	2,767,195	135,685,289	135,159,429	97,575
1911,	5,830,995	2,764,971	3,054,344	115,331,800	115,448,006	91,750
1912,	6,235,639	3,174,331	3,044,122	122,365,414	121,945,038	106,160
1913,	6,520,436	4,090,658	2,417,973	138,707,426	138,242,848	59,686
Totals,	65,631,058	35,947,633	29,572,832	947,304,096	944,180,453	1,198,497

RENOVATED BUTTER.

The following figures, from the same source as the preceding table, show the production and withdrawn tax paid of renovated butter, 1902-13:—

Renovated Butter (Pounds).

YEAR.	Production.	Withdrawn Tax paid.
1903,	54,658,790	54,223,234
1904,	54,171,183	54,204,478
1905,	60,029,421	60,171,504
1906,	53,549,900	53,361,088
1907,	62,965,613	63,078,504
1908,	50,479,489	50,411,446
1909,	47,345,361	47,402,382
1910,	47,433,575	47,378,446
1911,	39,292,591	39,352,445
1912,	46,387,398	46,413,895
1913,	38,354,762	38,285,114
Totals,	554,668,083	554,282,536

BUTTER.

The following table shows the average quotation for the best fresh creamery butter, in a strictly wholesale way, in the Boston market for the last ten years, as compiled by the Boston Chamber of Commerce:—

MONTH.	1913. Cents.	1912. Cents.	1911. Cents.	1910. Cents.	1909. Cents.	1908. Cents.	1907. Cents.	1906. Cents.	1905. Cents.	1904. Cents.
January, . . .	33.9	36.9	28.8	33.5	30.9	29.7	30.4	25.2	28.0	22.7
February, . . .	34.9	32.5	26.9	30.5	30.0	32.1	31.7	25.2	31.6	24.6
March,	36.4	32.1	24.2	32.0	29.1	30.2	30.2	25.5	28.0	24.1
April,	34.5	32.7	21.7	31.5	27.9	28.4	32.2	22.2	29.1	21.6
May,	28.7	30.4	22.8	29.0	26.6	24.1	31.4	19.9	23.9	19.9
June,	28.2	27.9	24.2	28.2	26.4	24.5	24.3	20.2	20.7	18.4

MONTH.	1913. Cents.	1912. Cents.	1911. Cents.	1910. Cents.	1909. Cents.	1908. Cents.	1907. Cents.	1906. Cents.	1905. Cents.	1904. Cents.
July, . . .	27.5	28.1	26.0	28.6	27.2	23.6	25.9	21.0	20.6	18.3
August, . .	28.2	27.1	27.2	29.6	28.2	24.5	26.0	23.8	21.6	19.1
September, .	31.3	29.1	27.7	29.6	31.3	25.3	29.2	25.6	21.2	20.8
October, . .	31.2	31.0	30.4	29.4	31.7	27.5	29.9	26.9	22.1	21.5
November, .	31.9	32.9	32.5	30.2	31.4	29.5	27.1	27.6	23.0	24.1
December, .	33.8	34.0	35.0	30.0	32.9	31.0	27.5	30.7	23.9	25.7
Averages, .	31.7	31.2	27.3	30.2	29.5	27.5	28.8	24.48	24.47	21.73

The Chamber of Commerce figures regarding the butter business in Boston for 1912 and 1913 are as follows:—

	1913. Pounds.	1912. Pounds.
Carried over in storage,	8,340,102	6,612,966
Receipts for January,	2,314,428	3,282,660
February,	2,870,790	3,256,729
March,	3,365,435	3,565,555
April,	4,433,969	3,905,002
May,	8,659,092	7,003,321
June,	12,938,572	12,225,290
July,	12,323,011	13,030,718
August,	8,333,419	8,346,787
September,	6,096,706	6,051,810
October,	4,241,941	4,961,020
November,	2,876,134	3,717,156
December,	3,251,088	2,263,182
Total supply,	80,044,687	78,222,196
Exports for year, deduct,	200	24,005
Net supply,	80,044,487	78,198,181
Storage stock December 27, deduct,	8,874,204	8,340,102
Consumption for year,	71,170,283	69,858,059

RECEIPTS OF CONDENSED MILK.

The Chamber of Commerce figures regarding the receipts of condensed milk at Boston for 1912 and 1913 are as follows:—

	1913. Barrels.	1913. Cases. ¹	1912. Barrels.	1912. Cases. ¹
January,	147	19,621	318	34,212
February,	167	24,862	174	32,066
March,	260	30,670	193	16,247
April,	170	22,193	375	20,614
May,	96	21,946	107	23,578
June,	320	38,300	187	27,080
July,	269	39,502	217	37,387
August,	137	22,902	146	44,461
September,	254	28,693	76	14,838
October,	1,328	25,895	262	22,240
November,	130	17,694	27	27,144
December,	206	29,605	222	22,079
Totals,	3,484	321,883	2,304	321,946

¹ Includes evaporated cream.

MILK.

Milk brought into Boston by Different Railroads, Dec. 1, 1912, to Nov. 30, 1913, as reported by the Railroad Commissioners (Quarts).

DATE.	Boston & Albany.	Boston & Maine.	New York, New Haven & Hartford.	Total.
1912.				
December,	651,882	6,916,685	1,422,419	8,990,986
1913.				
January,	429,311	7,179,151	1,437,881	9,046,343
February,	380,481	6,693,732	1,439,468	8,513,681
March,	444,513	7,377,392	1,546,405	9,368,310
April,	442,251	7,438,618	1,475,735	9,356,604
May,	500,943	7,732,448	1,748,368	9,981,759
June,	465,740	7,520,704	1,662,461	9,648,905
July,	451,915	7,430,444	1,725,201	9,607,560
August,	436,862	6,820,345	1,612,586	8,869,793
September,	490,677	6,151,288	1,550,894	8,192,859
October,	550,381	5,913,873	1,594,625	8,058,879
November,	586,978	5,578,902	1,505,290	7,671,170
Totals,	5,831,934	82,753,582	18,721,333	107,306,849

Comparative List of Number of Cows assessed in Massachusetts, May 1, 1906, April 1, 1912, and May 1, 1913.

COUNTIES.	1906.	1912.	1913.	DECREASE.		INCREASE.	
				1906-13.	1912-13.	1906-13.	1912-13.
Barnstable, . . .	2,448	2,305	2,251	197	54	-	-
Berkshire, . . .	17,404	16,463	15,317	2,087	1,146	-	-
Bristol, . . .	13,702	13,552	12,803	899	749	-	-
Dukes, . . .	656	583	588	68	-	-	5
Essex, . . .	17,131	14,529	13,456	3,675	1,073	-	-
Franklin, . . .	12,715	11,941	10,986	1,729	955	-	-
Hampden, . . .	12,096	10,504	9,486	2,610	1,018	-	-
Hampshire, . . .	14,383	12,261	11,467	2,916	794	-	-
Middlesex, . . .	29,508	25,932	24,060	5,448	1,318	-	-
Nantucket, . . .	378	419	453	-	-	75	34
Norfolk, . . .	11,200	10,095	9,766	1,434	329	-	-
Plymouth, . . .	8,465	7,765	7,613	852	152	-	-
Suffolk, . . .	1,186	1,015	1,138	48	-	-	123
Worcester, . . .	40,544	34,244	31,892	8,652	2,352	-	-
Totals, . . .	181,816	161,608	151,276	30,615	10,494	75	162

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price.

LOCATION, FARM.	Owner and Manager.	Approximate Number of Cows.	Where marketed.
Agawam, Reilly Farm, . . .	J. J. Reilly, owner and manager.	17	Springfield. ¹
Agawam, Colonial Farm, . . .	H. E. Bodurtha, owner and manager.	12	Springfield.
Agawam, Elm Shade Dairy, . . .	S. S. & E. F. Bodurtha, owners and managers.	25	Springfield.
Amherst, . . .	H. M. Thompson, owner and manager.	25	Holyoke.
Amherst, Groff & Simmons' farm.	Groff & Simmons, owners and managers.	34	Amherst.
Andover, Arden Farm, . . .	Wm. M. Wood, owner, J. M. Putnam, superintendent, Austin C. Huggins, manager of creamery.	55 ²	Andover, Lawrence, Woburn and Boston.
Andover, Shattuck Farms, . . .	F. Shattuck, owner and manager.	50	Lawrence.

¹ Several out-of-State farms also furnish milk of this class in Springfield.

² Twenty-five cows in Andover and 30 in New Hampshire.

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price — Continued.

LOCATION, FARM.	Owner and Manager.	Approximate Number of Cows.	Where marketed.
Auburn, Wellswood Farm, .	Geo. O. Keep, owner and manager.	30	Worcester.
Barnstable, Bay Farm, . .	H. C. Everett, owner and manager.	-	Barnstable.
Barre, Highland View Farm, .	D. A. Howe, owner, W. E. Howe, manager.	25	Worcester.
Bolton, Rocky Dundee Farm, .	R. H. Randall, lessee and manager.	20	Clinton.
Boston, Walker-Gordon Farm, 1106 Boylston Street.	Walker-Gordon Laboratory Company, owner, John Nichols, manager.	100	Boston and vicinity.
Brockton, Montello Station, Dutchland Farm.	Fred F. Field, owner, Earl D. Upton, manager.	70	Brockton.
Chilmark, West Tisbury, P. O. Oakview Farm.	J. F. Adams, owner, .	17	Vineyard Haven and Edgartown.
Dighton, Rock Farm, . . .	J. W. Earle, owner, Ralph Earle, manager.	15	Fall River. ¹
Dorchester, Codman Farm, .	Watson B. Fearing, owner and manager.	58	Boston.
East Lynn,	J. D. Coombs, lessee and manager.	3	East Lynn.
Fairhaven, Dana Farm, . .	Eliza N. and Edith Dana, owners and managers.	52	Fairhaven, Marion and Mattapoisett (in summer).
Framingham, Millwood Farm, .	Mrs. E. F. Bowditch, owner, J. P. Bowditch, manager, F. E. Barrett, superintendent.	178	Boston and Wellesley.
Framingham, Waverney Farm, .	Reginald W. Bird, owner, A. E. White, manager.	50	Boston.
Franklin, Ray Farm, . . .	E. K. Ray, estate owner, Joseph G. Ray, trustee and manager.	100	Boston, by Elm Farm Company.
Gloucester, Howard P. Lane's farm.	Howard P. Lane, owner and manager.	50	Gloucester.
Gloucester, H. Wallace Lane's farm.	H. Wallace Lane, owner and manager.	30	Gloucester.
Gloucester, Peter Hadstrom's farm.	Peter Hadstrom, owner and manager.	5	Gloucester.
Granby, C. W. Ball's farm, .	C. W. Ball, owner and manager.	29	Holyoke.
Greenfield, Wayside Farm, .	Frank H. Reed, owner, Mr. Purrington, manager.	25	Greenfield.
Hamilton, Miles River Farm, .	Maxwell Norman, owner and manager, C. E. Johnson, superintendent.	140	Boston.
Hardwick, Mixer Farm, . .	Mary A. Mixer, owner, Dr. Samuel J. Mixer, manager, S. R. Parker, superintendent.	165	Boston.
Haverhill (Bradford District), J. B. Sawyer's farm.	J. B. Sawyer, owner and manager.	-	Haverhill.
Haverhill (Bradford District), Cedar Crest Farm.	C. Herbert Poor, owner and manager.	20	Haverhill. ²
Haverhill, North Broadway Milk Farm.	E. A. Emerson, owner and manager.	35	Haverhill.
Haverhill (P. O. East Haverhill), Fred Kimball's Farm.	Fred Kimball, owner, Leonard Kimball, manager.	35	Haverhill.

¹ Several Rhode Island farms also furnish milk of this class in Fall River.

² Two New Hampshire dairymen, Geo. B. Freeman and Herbert N. Sawyer, also sell milk of this class in Haverhill.

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price — Continued.

LOCATION, FARM.	Owner and Manager.	Approximate Number of Cows.	Where marketed.
Holyoke, Whiting Farm, .	W. F. Whiting, owner, John F. Richardson, manager.	20	Holyoke.
Longmeadow, Hillbrow Farm, .	H. M. Burt, owner and manager.	20	Springfield.
Lowell, Hood Farm,	C. I. Hood, owner, J. E. Dodge, manager.	120	Lowell.
Ludlow, E. E. Chapman's Farm,	Edward E. Chapman, owner and manager.	22	Ludlow and Indian Orchard.
Lunenburg, Sunnyside Farm, .	Geo. M. Proctor, owner, Fred A. Miller, manager.	48	Fitchburg.
Marlborough, Fairview Farm, .	Elmer D. Howe & Son, owners and managers.	10	Marlborough.
Medford, Mystic Valley Farm, 75 Arlington Street.	John J. Mulkevin, owner and manager.	16	Medford.
Medford, Hillside Farm, 20 Gow Street.	Alberton Harris, owner and manager.	10	Medford.
Methuen, Bragdon Farms, .	E. L. Bragdon, owner and manager.	30	Lawrence.
Methuen, Cox Farms,	Louis Cox, owner, L. Coburn, manager.	31	Lawrence.
Methuen, Howe Farm,	E. D. Taylor, owner and manager.	50	Lawrence.
Methuen, Spring Valley Farms,	Fred Miller, owner and manager.	50	Lawrence.
Methuen, S. W. Williams' farm,	S. W. Williams, owner and manager.	30	Lawrence.
Millis, Lowland Farm,	E. F. Richardson, owner and manager.	25	Boston.
Milton, Highland Farm,	Patriquin & Newton, lessees, George Patriquin, manager.	65	Milton.
Needham, K. E. Webb's Farm,	Keneth C. Webb, owner and manager.	31	Needham.
Norfolk, Meadowside Farm, .	T. D. Cook & Co., owners and managers.	35	Boston.
North Amherst, The Elms, . .	R. D. Dickinson, owner and manager.	30	Amherst.
Northampton, W. J. LaFleur's farm.	W. J. LaFleur, owner and manager.	11	Northampton.
Oak Bluffs, Woodsedge Farm, .	F. W. Chase, owner and manager.	20	Oak Bluffs.
Paxton, E. G. Richard's farm, .	E. G. Richards, owner and manager.	40	Worcester, by C. Brigham & Co.
Paxton, Echo Farm,	W. J. Woods, owner, Joseph Graham, manager.	40	Worcester, by C. Brigham & Co.
Peabody, Maplehill Farm, . .	- - - - -	-	Boston, by H. P. Hood & Sons. ¹
Pittsfield, E. W. Page's farm, .	E. W. Page, owner and manager.	8	Pittsfield.
Pittsfield, Mr. Bardwell's farm,	Mr. Bardwell, owner and manager.	14	Pittsfield.
Pittsfield, Abby Lodge,	A. W. Cooley, owner, Mr. Carlson, manager.	35	Boston.
Saugus, Oaklandvale Farm, . .	Frank P. Bennett, owner and manager.	112	Lynn.
South Lincoln, South Lincoln Dairy Company.	South Lincoln Dairy Company, owners, W. A. Blodgett, manager.	250	Boston, Cambridge and Brookline.
South Natick, Carver Hill Farm.	Carver Hill Farms Inc., Austin Potter.	75	Boston, Wellesley, Natick, Needham and Dover.
Sherborn,	H. N. Brown, owner and manager.	50	Boston.
Sherborn,	J. M. Merriam, owner and manager.	40	Boston.

¹ H. P. Hood & Sons also distribute this class of milk from 10 farms in New Hampshire.

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price — Concluded.

LOCATION, FARM.	Owner and Manager.	Approximate Number of Cows.	Where marketed.
Sterling, Twin Oaks Farm (P. O. Pratt's Junction).	Rodney Monk, owner and manager.	75	Milk, Boston; cream, Worcester.
Stoughton, Tobey Farm, . . .	E. B. Hutchins, owner and manager.	15	Brockton.
Taunton, Geo. Soper's farm, .	George Soper, owner and manager.	30	Taunton.
Westwood, Fox Hill Farm, .	Joshua Crane, owner, L. W. Jackman, manager.	100	Boston.
West Newton and Barre, Wauwinet Farm.	Geo. H. Ellis, owner, P. F. Staples and R. M. Hardy, managers.	400	Boston, Brookline and Newton.
Warren, Maple Farm, . . .	J. R. Blair, owner, R. A. Siddens, manager.	27	Boston, by C. Brigham Company.
Worcester, Pleasant View Farm,	Warren C. Jewett, owner and manager.	40	Worcester.
Worcester,	Lewis J. Kendall, owner and manager.	40	Worcester.
Worcester, Intervale Farm, .	J. Lewis Ellsworth, owner and manager.	14	Worcester.
Worcester, Village Farm, . .	H. B. Prentice, owner and manager.	30	Worcester.

NOTE. — Deerfoot Farm Dairy, office 9 Bosworth Place, Boston, with milk depots at both Southborough and Northborough, sells milk of superior quality and cleanliness at a price above that of ordinary market milk, and handles the product of 129 dairy farms, averaging about 10 cows each, located in Southborough, Northborough, Westborough and Holliston. Most of these farms, therefore, at some time during the year come properly within the requirements of this list. The method of payment of this milk is explained in the following extract from a letter from the proprietor, Mr. Robert M. Burnett: "The milk from all our farms is tested once or twice a week on delivery at the dairy, samples being taken by Professor Prescott's agent. When the milk is found to contain below 25,000 bacteria per cubic centimeter, and cows, feed, water and stable conditions are reported by Dr. J. W. Robinson as healthful and satisfactory, and the average test is not lower than 4½ per cent. butter fat, the price paid is 50 cents per can at the Deerfoot Dairy for the full yield all the year around. For any milk passing the above conditions, of good quality, testing below 4½ per cent. butter fat, we pay 45 cents per can for such proportion as we can bottle. For the balance of the milk not bottled, and for the milk from farms not meeting the conditions required for bottled milk, we pay the price agreed upon between the Milk Producers Association and the Contractors Union. For the month of December, 1912, this compact was with 129 farms averaging about 10 cows to the farm."

The foregoing list is necessarily incomplete and subject to continual change. Additional names, eligible to this list, are earnestly solicited.

List of Massachusetts Dairy Farms making Certified Milk.

NAME, LOCATION.	Owner and Manager.	Ap- proxi- mate Num- ber of Cows.	Certified by —	Where marketed.
Cedar Hill Farm, Wal- tham.	Miss Cornelia War- ren, owner, Chas. Cahill, manager.	215	Cambridge Medi- cal Commission.	Waltham, Cam- bridge, Boston.
Cedar Crest Farm, Wal- tham.	John C. Runkle, owner, Louis W. Dean, manager.	90	Cambridge Medi- cal Commission.	North Shore, Cambridge, Boston.
Cherry Hill Farm, Bev- erly.	H. P. Hood & Sons, owners, O. H. Perrin, manager.	80	Medical Milk Commission of Boston.	Boston, North Shore, Law- rence.
A. D. Davis, farm, Sheffield.	A. D. Davis, owner and manager.	60	— —	A little in Great Barrington. Mostly out- side of State.
Ledyard Farm, Ando- ver.	J. A. & W. H. Gould,	50	Malden Medical Commission.	Malden.
Massachusetts Agricul- tural College Farm, Amherst.	Massachusetts Agri- cultural College Farm, J. A. Foord.	65	Medical Milk Commission of Boston.	Boston.
Oaks Farm, Cohasset,	C. W. Barron, owner, W. E. Stilwell, man- ager.	50	Medical Milk Commission of Cohasset.	Cohasset.
Prospect Hill Farm, Essex.	J. A. & W. H. Gould,	175	Medical Milk Commission of Boston.	Boston, Brook- line, Jamaica Plain, North Shore.
W. C. White's farm, Acushnet.	Walter C. White,	28	New Bedford Medical Com- mission.	New Bedford.

LIST OF LOCAL MILK INSPECTORS.

Milk Inspectors for Massachusetts Cities, 1913.

Beverly,	Henry E. Dodge, 2d.
Boston,	Prof. James O. Jordan.
Brockton,	George E. Bolling.
Cambridge,	Dr. W. A. Noonan.
Chelsea,	Dr. W. S. Walkley.
Chicopee,	C. J. O'Brien.
Everett,	E. Clarence Colby.
Fall River,	Henry Boisseau.
Fitchburg,	John F. Bresnahan.
Gloucester,	Dr. George E. Watson.
Haverhill,	Dr. Homer L. Conner.
Holyoke,	Daniel P. Hartnett.
Lawrence,	Dr. J. H. Tobin.
Lowell,	Melvin F. Master.
Lynn,	George A. Flanagan.
Malden,	J. A. Sandford.
Marlborough,	John J. Cassidy.
Medford,	Winslow Joyce.
Melrose,	Caleb W. Clark, M.D.
New Bedford,	Herbert B. Hamilton, D.V.S.

Newburyport,	Dr. R. D. Hamilton.
Newton,	Arthur Hudson.
North Adams,	Henry A. Tower.
Northampton,	George R. Turner.
Pittsfield,	Eugene L. Hannon.
Quincy,	Edward J. Murphy.
Salem,	John J. McGrath.
Somerville,	Herbert E. Bowman.
Springfield,	Stephen C. Downs.
Taunton,	Lewis I. Tucker.
Waltham,	Arthur E. Stone, M.D.
Woburn,	Edward P. Kelly, M.D.
Worcester,	Gustaf L. Berg.

Milk Inspectors for Massachusetts Towns, 1913.

Adams,	Dr. A. G. Potter.
Amesbury,	E. S. Worthen.
Andover,	Franklin H. Stacey.
Arlington,	Dr. L. L. Pierce.
Attleborough,	Caleb E. Parmenter.
Barnstable,	George T. Mecarta.
Belmont,	Thomas F. Harris.
Brookline,	Frederick H. Osgood.
Canton,	R. N. Hoyt.
Clinton,	Gilman L. Chase.
Cohasset,	Dr. D. W. Gilbert, D.V.S.
Concord,	Erastus H. Smith.
Dedham,	Edward Knobel.
Easthampton,	George L. McEvoy.
Fairhaven,	Bertha F. Carl Frommel, M.D.
Framingham,	R. N. Hoyt.
Gardner,	Clifford W. Shippee.
Greenfield,	George P. Moore.
Hudson,	Dr. A. L. Cundall.
Lancaster,	George E. Howe.
Leominster,	William H. Dodge.
Ludlow,	A. L. Bennett, D.V.S.
Marblehead,	Andrew W. Stone.
Middleborough,	T. F. Conway.
Millbury,	Arthur A. Brown.
Milton,	W. C. Tucker.
Monson,	Dr. E. W. Capen.
Needham,	R. N. Hoyt.
North Attleborough,	Hugh Gaw, V.S.
Palmer,	Edward P. Brown.
Peabody,	H. S. Pomeroy, M.D.
Plainville,	John C. Eiden.

Reading,	C. H. Playden, M.D.
Revere,	Joseph E. Lamb.
Salisbury,	John H. Pike.
Southbridge,	Albert R. Brown.
South Framingham,	Dr. J. H. McCann.
South Hadley Falls,	George F. Boudreau.
Spencer,	James A. Spencer.
Stoneham,	George H. Allen.
Swampscott,	Herbert D. Smith.
Wakefield,	Harry A. Simmonds.
Ware,	Fred E. Marsh.
Watertown,	Luther W. Simmonds.
Wellesley,	R. N. Hoyt.
Westborough,	Charles H. Reed.
Westfield,	William H. Porter.
Weston,	R. N. Hoyt.
West Springfield,	Norman T. Smith.
Williamstown,	G. S. Jordan, V.S.
Winchendon,	Dr. G. W. Stanbridge.
Winchester,	Morris Dineen.
Winthrop,	Smith A. Mowray.

CREAMERIES, MILK DEPOTS, ETC.

Co-operative Creameries.

NUMBER AND LOCATION.	Name.	Superintendent or Manager.
1. Ashfield,	Ashfield Creamery,	William Hunter, manager.
2. Belchertown,	Belchertown Creamery,	M. G. Ward, president.
3. Cummington,	Cummington Creamery,	D. C. Morey, superintendent.
4. Easthampton,	Hampton Creamery,	W. H. Wright, treasurer.
5. Egremont (P. O. Great Barrington).	Egremont Creamery,	E. G. Tyrell, manager.
6. Monterey,	Berkshire Hills Creamery,	F. A. Campbell, treasurer.
7. Shelburne,	Shelburne Creamery,	Ira Barnard, manager.
8. Westfield,	Wyben Springs Creamery,	C. H. Kelso, manager.

Proprietary Creameries.

NUMBER AND LOCATION.	Name.	Owner or Manager.
1. Amherst,	Amherst Creamery Company,	R. W. Pease, manager.
2. Amherst,	Fort River Creamery,	Clarence M. Wood, manager (estate of E. A. King, owner).
3. Brimfield,	Crystal Brook Creamery,	F. N. Lawrence, proprietor.
4. Groton,	Lawrence Creamery,	Myron P. Swallow, manager.
5. Heath,	Cold Spring Creamery,	I. W. Stetson & Son.
6. Hinsdale,	Hinsdale Creamery,	Walter C. Solomon, proprietor.
7. Marlborough,	Este's Creamery,	F. F. Este, proprietor.

Educational.

LOCATION.	Name.	Manager.
Amherst,	Dairy Industry Course, Massachusetts Agricultural College.	W. P. B. Lockwood, professor in charge.

Principal Milk-distributing Depots.

NAME.	Location.	Manager.
Acton Farms Milk Company.	Somerville, Windsor Street, . .	Arthur B. Parker, treasurer.
Alden Brothers Company, Oak Grove Farm, Waumet Farm.	Boston office, 1171 Tremont Street, depot, 24-28 Duncan Street.	Charles L. Alden, president, John Alden, treasurer.
Anderson Brothers, . .	Worcester, Eckman Street, . .	Anderson Bros.
Boston Condensed Milk Company.	Boston, 484 Rutherford Avenue, .	W. A. Graustein.
Brigham, C., Company, .	Cambridge, 158 Massachusetts Avenue.	John K. Whiting.
Brigham, C., Company, .	Worcester, 9 Howard Street, . .	C. Brigham Company.
Deerfoot Farms Dairy, .	Boston office, 9 Bosworth Street, depots at Northborough and Southborough.	S. H. Howes.
Elm Farm Milk Company,	Boston, Wales Place,	James H. Knapp, treasurer.
Hood, H. P., & Sons, .	Boston, 494 Rutherford Avenue; branches, 24 Anson Street, Forest Hills, 886 Broadway, Chelsea.	Charles H. Hood.
	Lynn, 193 Alley Street,	
	Malden, 425 Main Street, . . .	
	Watertown, 479 Pleasant Street, .	
	Lawrence, 629 Common Street, .	
Learned, G. S. (Fitchburg Creamery).	Fitchburg, 26 Cushing Street, .	G. S. Learned.
Newhall, J. A.,	Newburyport, 32 Munroe Street, .	J. A. Newhall.
Perry, A. D.,	Worcester, Kansas Street, . . .	A. D. Perry.
Prentice, H. H., & Co. (Berkshire Creamery).	Pittsfield, Crane Avenue, . . .	H. H. Prentice.
Somers Creamery Company,	Springfield, 178 Dwight Street, .	W. M. Cushman.
Springfield Creamery, .	Springfield, Main Street, . . .	F. B. Allen, proprietor.
Tait Brothers,	Springfield, 37 Vinton Street, .	Tait Brothers, proprietors.
Wachusett Creamery, .	Worcester, 6 Lincoln Street, . .	E. H. Thayer & Co., proprietors.
Whiting, D., & Sons, .	Boston, 570 Rutherford Avenue, .	George Whiting.

Milk Laboratory.

Walker-Gordon Laboratory,	Boston, 793 Boylston Street, .	George W. Franklin.
---------------------------	--------------------------------	---------------------

Receiving Depots for Milk, for Shipments to New York City.

The Borden Company of New York.	West Stockbridge,	Thomas Roberts.
Willow Brook Dairy Company.	Sheffield,	Frank Percy.

ENCOURAGEMENT OF DAIRYING EXPENSES, AUGUST TO NOVEMBER.

Printing,	\$51 18
Agents: compensation,	183 35
Agents: expenses,	426 29
Judges: expenses,	24 45
Photography,	55 80
Supplies,	93 74
<hr/>	
Total expenses,	\$834 81
Prizes,	3,000 00
<hr/>	
Total expenditures,	\$3,834 81

REGULAR BUREAU EXPENSES.

The following is a classified statement of the expenses for the year ending Nov. 30, 1913:—

Bureau: compensation and traveling expenses,	\$496 36
Agents: compensation,	3,010 62
Agents: traveling expenses and samples purchased,	2,612 63
General agent: traveling and necessary expenses,	263 33
Analysts: analyses, tests, court attendance,	929 50
Printing and supplies,	511 06
Educational,	176 50
<hr/>	
Total,	\$8,000 00

P. M. HARWOOD,

General Agent.

Accepted and adopted as the report of the Dairy Bureau.

CHARLES M. GARDNER.
GEORGE W. TRULL.
O. E. BRADWAY.

1914
B

TWENTY-FOURTH ANNUAL REPORT

OF THE

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 15, 1915.



BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
32 DERNE STREET.

1915.

TWENTY-FOURTH ANNUAL REPORT

OF THE

Mass:

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 15, 1915.



BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
32 DERNE STREET.

1915.

APPROVED BY
THE STATE BOARD OF PUBLICATION.

614.32M3

D132

1914

B

DAIRY BUREAU—1914.

CHARLES M. GARDNER, WESTFIELD, *Chairman.*

GEORGE W. TRULL, TEWKSBURY, P. O. LOWELL, R. F. D.

OMER E. BRADWAY, MONSON.

Secretary.

WILFRID WHEELER, *Executive Officer and Secretary of the State
Board of Agriculture.*

General Agent.

P. M. HARWOOD,

ADDRESS, ROOM 136, STATE HOUSE, BOSTON.

The Commonwealth of Massachusetts.

REPORT OF THE DAIRY BUREAU.

The work of carrying out the provisions of chapter 96 of the Resolves of 1913, relating to encouragement of practical dairying, has been continued by the Bureau during 1914.

The number of entries in the clean milk contest of 1913, open to dairies of five or more cows whose owners were practical farmers superintending their own dairies, was 151. The number of entries in the corresponding class in 1914 was 229, an increase of 78.

The cleanliness of the samples taken in 1914 showed great improvement over those of the year before, thus proving that this feature of the work is meeting with excellent results.

In the clean milk contest, 1914, the State was divided into four districts, namely, western, comprising the four western counties; central, Worcester county; northeastern, Middlesex and Essex counties; and southeastern, comprising the remaining counties of the State.

Twenty-five prizes ranging from \$6 to \$50 each were offered in each district. There was also offered a sweepstakes prize of \$100. A prize of \$125 was offered to the district making the largest number of entries, and \$100 to the district making the best showing of clean milk. All the above prizes were awarded except the sweepstakes prize, where the money offered was equally divided among five contestants tied for the position. In addition to the above, 55 honorable mention certificates were awarded, 30 in the central and 25 in the western district.

Six prizes ranging from \$6 to \$16 each were offered in each district to persons under eighteen years of age, sons, daughters,

protégés or actual employees of owners of farms eligible in this contest. A sweepstakes ribbon was also offered.

Five prizes, ranging from \$4 to \$12 each, were offered in each district to hired men and women over eighteen years of age doing the milking on the eligible farms. A sweepstakes ribbon was also offered. Most of the junior and hired help prizes were competed for and awarded.

Other prizes were offered as follows:—

In Class 2, a prize of \$100 was offered for the best system of dairy-farm accounting for practical farmers, competition open to the world. In this class there were 3 entries. The plans submitted by the contestants, practically taken from books already published, so far nullified the object of the award that upon recommendation of the judge the prize was not awarded.

In Class 3, three prizes, \$100, \$60 and \$40, were offered for the best systems of dairy-farm accounting in actual operation. There were 2 entries in this class, and the second and third prizes were awarded.

In Class 4, a prize of \$100 was offered for the best plan of a practical dairy barn. Two plans were submitted, and the prize was equally divided between the two contestants.

In Class 5, three prizes, \$100, \$60 and \$40, were offered for practical dairy barns in actual use. There were 11 entries and the three prizes were awarded. Four honorable mention certificates were also issued.

In Class 6, three prizes, aggregating \$450, were offered for the best and most profitable dairy-farm operations. No prize was awarded in this class on account of lack of competition.

The total amount of prizes offered was \$4,439; the total amount awarded was \$3,735.30. A full account of these contests will be found in "Report on Encouragement of Dairying Contests, 1914," issued by the Bureau.

The police work of the Bureau for 1914 resulted in 129 cases in court and 127 convictions. Nine of these were for violation of the milk laws, 27 for violation of the renovated butter law, and 93 for violation of the oleomargarine laws.

In the educational work, the chairman addressed two and the general agent thirty-one meetings during the year. These lec-

tures explained the food value of milk, the work of the Bureau in conducting the encouragement of practical dairy contest, emphasized the necessity for proper remuneration to the producer for milk and other dairy products, also the superior worth of clean, fresh milk and the importance of its production in Massachusetts.

Leaflets A, B, C and D on milk, by P. M. Harwood, were printed, and many thousand copies were distributed during the year. The Bureau has also published Circular No. 11, "Some Bacteriological Aspects of Clean Milk Inspection," by Charles E. Marshall, Ph.D., and Circular No. 13, "The Clean Milk Contest," by P. M. Harwood.

By appointment of His Excellency Governor Walsh, the general agent spent a portion of the summer in Europe studying dairy conditions. His trip was cut short on account of the European war, nevertheless he obtained much valuable information, which will be of great use to him in the conduct of his official duties.

By invitation, the Bureau co-operated with the Boston Chamber of Commerce in its recent milk hearings in Massachusetts where the chairman of the Bureau presided. The general agent attended the following hearings: Boston and Worcester, Massachusetts; Portsmouth, New Hampshire; Newport, Augusta and Auburn, Maine; and Bellows Falls, Vermont.

The Bureau takes this opportunity to express its appreciation and thanks to Prof. J. A. Foord of the Massachusetts Agricultural College, who acted without compensation as judge in Classes 2, 3, 4 and 5 of the encouragement of practical dairy contest, and to Prof. Simeon C. Keith of the Massachusetts Institute of Technology, judge in Class 1, both of whom showed excellent judgment in the discharge of their duties. The Bureau also feels under special obligation to Mr. G. L. Berg, milk inspector of Worcester, who did much to make a success of the clean milk exhibit at the Worcester meeting, and to those milk inspectors of the State who co-operated with the Bureau in carrying on the clean milk contest during the year.

THE DAIRY SITUATION.

Much is sometimes made of the fact that there is a decline in the number of dairy cows in Massachusetts. That Massachusetts is no worse off in this respect than some other States, and not so badly off as the States immediately north of us, is overlooked.¹ The elimination of unprofitable dairy cows and the dropping out of unsuccessful dairymen, for whatever cause, as well as the inevitable reduction of the milk supply to such a point as will ultimately bring the price of milk to a profitable figure, are but the natural results of an inadequate price for milk.

The decline in the number of cows is greatest in those localities where milk is shipped by rail to large cities for consumption. It is, therefore, perfectly natural that nearby localities are first to be affected. This decline, however, does not stop but goes on and on no matter how far the area of milk supply is extended, and the near future will, undoubtedly, see further decline, especially in northern New England and even in Canada, until milk producers come to a realizing sense of the great fundamental fact that milk has been too long sold below cost price. Milk production will decrease until the great law of supply and demand does its share of the work in rectifying the situation. The remedy, so far as we are concerned, is the education of the consumer to the food value of milk as compared with other animal foods, together with the education of all to the exact knowledge of the producer's position. Greater economy in milk production must be practiced. Better cows, more scientific feeding and improved business methods are urged of the farmer. Economy in handling, especially in the method of distribution, is urged of the distributor, and a sense of justice and willingness to pay a fair price for milk is urged of the consumer.

¹ The number of cows assessed in Massachusetts in 1905 was 181,920; in 1914, 147,209, showing a decrease in ten years of 34,711 cows, or 19 per cent.

The number of cows assessed in New Hampshire in 1905 was 113,712; in 1914, 86,438, showing a decrease of 24,202, or 24 per cent.

The number of cows assessed in Maine in 1905 was 165,216; in 1914, 130,661, showing a decrease of 34,555 cows, or 20 per cent.

In Vermont, ten years' figures are not available. Commissioner Brigham writes that the falling off of milch cows and other neat stock, 1913-14, was 10,700 head, or 3 per cent. It will be seen that this is at the rate of 30 per cent. for ten years.

CONDENSED MILK.

Figures furnished by the Boston Chamber of Commerce concerning the amount of condensed milk handled in Boston in 1914 show an increase of 110,718 cases and a decrease of 2,633 barrels over 1913. Full data concerning this report indicates, on the whole, an increase in the consumption of these products. (See table on page 15.)

OLEOMARGARINE.

The number of retail oleomargarine licenses in force in the State in November, 1913, was 884, while in 1914 it was 778, showing a decrease of 106. In Boston, the number of packages reported by the Chamber of Commerce in 1913 was 127,994, while in 1914 it was 99,999, showing a decrease of 27,995. Oleomargarine produced in the United States in 1913 was 145,227,872 pounds, while in 1914 it was 144,021,276 pounds, showing a decrease of 1,206,596 pounds. This decrease in the manufacture of oleomargarine is due in some degree to a falling off of export trade, but probably more to the reduced cost of genuine butter, for which the majority of people have a decided preference. (See tables on pages 12 and 13.)

RENOVATED BUTTER.

In 1913 there were 38,354,762 pounds of renovated butter produced in the United States, while in 1914 there were 32,470,030 pounds, showing a decrease of 5,884,732 pounds in twelve months. The high mark for the production of renovated butter in the United States was in 1907, when 62,965,613 pounds were produced. The gradual falling off in the production of renovated butter, with the exception of one year when there was an increase (1912), shows that these goods are not meeting with the popular favor originally expected by the manufacturers. (See table on page 13.)

BUTTER.

The average wholesale price of butter in the Boston market for 1913, as reported by the Chamber of Commerce, was 31.7 cents, and in 1914, 29.4 cents, showing a decrease of 2.3 cents.

The annual consumption of butter, Boston output, during 1913 was 71,168,283 pounds, and in 1914, 72,922,533 pounds, showing an increase of 1,754,250 pounds. (Details will be found on page 14.)

PERSONNEL OF THE BUREAU.

The personnel of the Bureau is as follows: Charles M. Gardner of Westfield, chairman, George W. Trull of Tewksbury and Omer E. Bradway of Monson. The executive force, agents, analysts, etc., are as follows: executive officer and secretary, Wilfrid Wheeler; general agent, P. M. Harwood; analysts, B. F. Davenport, M.D., Boston, and Gilbert L. Clark, Emerson Laboratory, Springfield; agent, A. W. Lombard; and three others have been temporarily employed.

SUMMARY OF POLICE WORK.

Total number of inspections,	1 6,099
Number of inspections where no samples were taken,	4,277
Number of samples of butter, oleomargarine, all purchased,	1,816
Number of samples of milk and cream,	51
Cases entered in court,	129
Addresses by general agent and others,	36

Cases prosecuted during the twelve months ending November 30, 1914, by months and courts, with law violated, and results, are as follows: —

¹ There were 45 extra samples taken during the year, therefore this number is less than the sum of the next three items.

COURT.	Month.	Num-ber.	Law violated.	Con-victed.	Dis-charged.
Concord, Central Middlesex District.	December, .	6	6 renovated butter,	6	—
Fall River, Second Bristol District.	December, .	6	6 oleomargarine, .	6	—
Plymouth, Third Plymouth District.	December, .	6	6 renovated butter,	6	—
Haverhill, Northern Essex District.	January, .	4	2 oleomargarine, 2 renovated butter.	4	—
Westfield, Western Hampden District.	January, .	1	1 milk,	1	—
Abington, Second Plymouth District.	January, .	4	4 oleomargarine, .	4	—
Fall River, Second Bristol District.	February, .	44	44 oleomargarine, .	43	1
New Bedford, Third Bristol District.	March, .	8	8 oleomargarine, .	8	—
East Brookfield, Western Worcester District.	March, .	1	1 milk,	1	—
Taunton, First Bristol District,	March, .	4	4 oleomargarine, .	4	—
Lynn, South Essex District, .	March, .	4	2 renovated butter, 2 oleomargarine.	4	—
Chester, Western Hampden District.	March, .	1	1 milk,	1	—
Natick,	March, .	6	4 renovated butter, 2 oleomargarine.	6	—
Boston, Boston Municipal, .	March, .	2	2 oleomargarine, .	2	—
Cambridge, Third Eastern Middlesex District.	March, .	4	4 renovated butter,	4	—
Lawrence Police,	March, .	2	2 renovated butter,	2	—
Lowell Police,	March, .	2	2 renovated butter,	2	—
Haverhill, Northern Essex District.	May, . .	10	4 oleomargarine, 5 renovated butter, 1 milk.	10	—
Salem, First Essex District, .	May, . .	1	1 milk,	1	—
Athol, First Northern Worcester District.	May, . .	1	1 milk,	1	—
Southbridge, First Southern Worcester District.	August, .	1	1 milk,	1	—
Springfield Police,	September, .	1	1 milk,	1	—
Northampton, Hampshire District.	November, .	1	1 milk,	1	—
Cambridge, Third Eastern Middlesex District.	November, .	5	5 oleomargarine, .	4	1
Somerville Police,	November, .	4	4 oleomargarine, .	4	—

NOTE. — The Bureau is indebted to the milk inspectors of Massachusetts for assistance which has resulted in court cases.

The charges in the several cases entered in court for the year ending November 30, 1914, have been as follows:—

Furnishing oleomargarine in restaurants, etc., without notice to guests,	82
Selling renovated butter in unmarked packages,	27
Selling adulterated milk,	9
Selling oleomargarine in unmarked ¹ packages,	8
Selling oleomargarine without sign on vehicle,	3

¹ In these cases oleomargarine was sold when butter was asked for, but the charge was made in this way for convenience.

The following table shows the inspections without samples, and the number of samples taken during the past twelve years: —

YEARS.	Inspections without Samples.	Samples.
1903-13 (inclusive),	56,291	18,127
1914,	4,277	1,867
Total for twelve years,	60,568	19,994
Average,	5,047	1,666

TABLES RELATING TO OLEOMARGARINE.

The number of United States oleomargarine licenses in force in Massachusetts in November, 1913 and 1914, is as follows: —

	1913.	1914.
Wholesale licenses in Boston,	19	21
Wholesale licenses in other cities,	12	19
Totals,	31	40
Retail licenses in Boston,	121	104
Retail licenses in other cities and towns,	763	674
Totals,	884	778

The following figures, taken from the annual report of the United States Commissioner of Internal Revenue for 1914, show the production, withdrawn tax paid, and withdrawn for export of the two classes of oleomargarine, as defined by act of May 9, 1902, covering the period of twelve years, since it went into effect on July 1, 1902: —

Oleomargarine (Pounds).

YEAR.	PRODUCT TAXED AT RATE OF 10 CENTS PER POUND.			PRODUCT TAXED AT RATE OF $\frac{1}{4}$ CENT PER POUND.		
	Produced.	With- drawn Tax paid.	With- drawn for Export.	Produced.	With- drawn Tax paid.	With- drawn for Export.
1903,	5,710,407	2,312,493	3,334,969	67,573,689	66,785,796	151,693
1904,	3,785,670	1,297,068	2,504,940	46,413,972	46,397,984	123,425
1905,	5,560,304	3,121,640	2,405,763	46,427,032	46,233,691	137,670
1906,	4,888,986	2,503,095	2,422,320	50,545,914	50,536,466	78,750
1907,	7,758,529	5,009,094	2,695,276	63,608,246	63,303,016	129,350
1908,	7,452,800	4,982,029	2,522,188	74,072,800	73,916,869	109,480
1909,	5,710,301	3,275,968	2,403,742	86,572,514	86,221,310	112,958
1910,	6,176,991	3,416,286	2,767,195	135,685,289	135,159,429	97,575
1911,	5,830,995	2,764,971	3,054,344	115,331,800	115,448,006	91,750
1912,	6,235,639	3,174,331	3,044,122	122,365,414	121,945,038	106,160
1913,	6,520,436	4,090,658	2,417,973	138,707,426	138,242,848	59,686
1914,	6,384,222	3,831,706	2,121,162	137,637,054	137,747,982	22,540
Totals, . . .	72,015,280	39,779,339	31,693,994	1,084,941,150	1,081,928,435	1,221,017

RENOVATED BUTTER.

The following figures, from the same source as the preceding table, show the production and withdrawn tax paid of renovated butter, 1902-14: —

Renovated Butter (Pounds).

YEAR.	Production.	Withdrawn Tax paid.
1903,	54,658,790	54,223,234
1904,	54,171,183	54,204,478
1905,	60,029,421	60,171,504
1906,	53,549,900	53,361,088
1907,	62,965,613	63,078,504
1908,	50,479,489	50,411,446
1909,	47,345,361	47,402,382
1910,	47,433,575	47,378,446
1911,	39,292,591	39,352,445
1912,	46,387,398	46,413,895
1913,	38,354,762	38,285,114
1914,	32,470,030	32,513,244
Totals,	587,138,113	586,795,780

BUTTER.

The following table shows the average quotation for the best fresh creamery butter, in a strictly wholesale way, in the Boston market for the last ten years, as compiled by the Boston Chamber of Commerce:—

MONTH.	1914.	1913.	1912.	1911.	1910.	1909.	1908.	1907.	1906.	1905.
	Cents.	Cents.	Cents.	Cents.	Cents.	Cents.	Cents.	Cents.	Cents.	Cents.
January, . . .	32.5	33.9	36.9	28.8	33.5	30.9	29.7	30.4	25.2	28.0
February, . . .	28.8	34.9	32.5	26.9	30.5	30.0	32.1	31.7	25.2	31.6
March, . . .	27.7	36.4	32.1	24.2	32.0	29.1	30.2	30.2	25.5	28.0
April, . . .	25.1	34.5	32.7	21.7	31.5	27.9	28.4	32.2	22.2	29.1
May, . . .	25.8	28.7	30.4	22.8	29.0	26.6	24.1	31.4	19.9	23.9
June, . . .	27.5	28.2	27.9	24.2	28.2	26.4	24.5	24.3	20.2	20.7
July, . . .	27.9	27.5	28.1	26.0	28.6	27.2	23.6	25.9	21.0	20.6
August, . . .	30.1	28.2	27.1	27.2	29.6	28.2	24.5	26.0	23.8	21.6
September, . . .	30.9	31.3	29.1	27.7	29.6	31.3	25.3	29.2	25.6	21.2
October, . . .	30.9	31.2	31.0	30.4	29.4	31.7	27.5	29.9	26.9	22.1
November, . . .	32.4	31.9	32.9	32.5	30.2	31.4	29.5	27.1	27.6	23.0
December, . . .	32.7	33.8	34.0	35.0	30.0	32.9	31.0	27.5	30.7	23.9
Averages, . . .	29.4	31.7	31.2	27.3	30.2	29.5	27.5	28.8	24.48	24.47

The Chamber of Commerce figures regarding the butter business in Boston for 1913 and 1914 are as follows:—

	1914.	1913.
	Pounds.	Pounds.
Carried over in storage,	8,874,204	8,340,102
Receipts for January,	3,540,476	2,314,428
February,	2,910,790	2,870,790
March,	4,171,261	3,363,435
April,	4,310,917	4,433,969
May,	7,326,985	8,659,092
June,	13,701,274	12,938,572
July,	12,634,474	12,323,011
August,	7,457,341	8,333,419
September,	5,932,317	6,096,706
October,	4,902,471	4,241,941
November,	3,208,117	2,876,134
December,	2,882,011	3,251,088
Total supply,	81,902,638	80,042,687
Exports for year, deduct,	16,903	200
Net supply,	81,885,735	80,042,487
Storage stock December 26, deduct,	8,963,202	8,874,204
Consumption for year,	72,922,533	71,168,283

RECEIPTS OF CONDENSED MILK.

The Chamber of Commerce figures regarding the receipts of condensed milk at Boston for 1913 and 1914 are as follows: —

	1914. Barrels.	1914. Cases.	1913. Barrels.	1913. Cases.
January,	299	22,030	147	19,621
February,	72	32,198	167	24,862
March,	72	38,638	260	30,670
April,	55	26,362	170	22,193
May,	15	29,889	96	21,946
June,	—	35,766	320	38,300
July,	50	47,102	269	39,502
August,	10	66,127	137	22,902
September,	—	35,749	254	28,693
October,	33	22,071	1,328	25,895
November,	40	34,253	130	17,694
December,	205	42,416	206	29,605
Totals,	815	432,601	3,484	321,883

MILK.

Milk brought into Boston by Different Railroads, Dec. 1, 1913, to Nov. 30, 1914, as reported by the Public Service Commissioners (Quarts).

DATE.	Boston & Albany.	Boston & Maine.	New York, New Haven & Hartford.	Total.
1913.				
December,	564,660	6,290,180	1,501,612	8,356,452
1914.				
January,	296,935	6,604,900	1,502,442	8,404,277
February,	288,116	6,043,261	1,475,780	7,807,157
March,	372,194	6,629,606	1,640,016	8,641,816
April,	393,512	6,373,612	1,829,712	8,596,836
May,	395,019	7,091,511	1,896,857	9,383,387
June,	445,397½	7,471,728	1,906,124	9,823,249½
July,	395,257½	7,109,790	1,716,631	9,221,678½
August,	506,954	6,717,219	1,498,746	8,722,919
September,	652,448	6,279,826	1,450,443	8,382,717
October,	306,271	6,349,448	1,539,926	8,195,645
November,	293,700	6,182,944	1,625,447	8,102,091
Totals,	4,910,464	79,144,025	19,583,736	103,638,225

Comparative List of Number of Cows assessed in Massachusetts, May 1, 1906, April 1, 1913, and May 1, 1914.

COUNTIES.	1906.	1913.	1914.	DECREASE.		INCREASE.	
				1906-14.	1913-14.	1906-14.	1913-14.
Barnstable,	2,448	2,251	2,243	205	8	-	-
Berkshire,	17,404	15,317	14,796	2,608	521	-	-
Bristol,	13,702	12,803	13,242	460	-	-	439
Dukes,	656	588	623	33	-	-	35
Essex,	17,131	13,456	13,151	3,980	305	-	-
Franklin,	12,715	10,986	10,165	2,550	821	-	-
Hampden,	12,096	9,486	8,947	3,149	539	-	-
Hampshire,	14,383	11,467	10,977	3,406	490	-	-
Middlesex,	29,508	24,060	24,053	5,455	7	-	-
Nantucket,	378	453	423	-	30	45	-
Norfolk,	11,200	9,766	9,397	1,803	369	-	-
Plymouth,	8,465	7,613	7,475	990	138	-	-
Suffolk,	1,186	1,138	922	264	216	-	-
Worcester,	40,544	31,892	30,795	9,749	1,097	-	-
Totals,	181,816	151,276	147,209	34,652	4,541	45	474

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price.

LOCATION, FARM.	Owner and Manager.	Approximate Number of Cows.	Where marketed.
Agawam, Reilly Farm,	J. J. Reilly, owner and manager.	17	Springfield.
Agawam, Colonial Farm,	H. E. Bodurtha, owner and manager.	12	Springfield.
Agawam, Elm Shade Dairy,	S. S. & E. F. Bodurtha, owners and managers.	25	Springfield.
Amherst, H. M. Thompson's farm,	H. M. Thompson, owner and manager.	25	Holyoke.
Amherst, U. G. Groff's farm,	U. G. Groff, owner and manager.	34	Amherst.
Andover, Arden Farm,	Wm. M. Wood, owner; J. M. Putnam, superintendent; Austin C. Huggins, manager of creamery.	55	Andover, Lawrence, Woburn and Boston.
Andover, Shattuck Farms,	F. Shattuck, owner and manager.	50	Lawrence.
Auburn, Wellwood Farm,	George O. Keep, owner and manager.	30	Worcester.

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price — Continued.

LOCATION, FARM.	Owner and Manager.	Approximate Number of Cows.	Where marketed.
Barnstable, Bay Farm,	H. C. Everett, owner and manager.	—	Barnstable.
Barre, Highland View Farm, . .	D. A. Howe, owner; W. E. Howe, manager.	25	Worcester.
Beverly, George R. Wales' farm, .	George R. Wales, owner and manager.	20	Beverly.
Bolton, Rocky Dundee Farm, . .	R. H. Randall, lessee and manager.	20	Clinton.
Bolton, Wataquodock Farm, . .	Paul Cunningham, owner and manager.	35	Boston and vicinity, by Alden Brothers Company.
Boston, Walker-Gordon Farm, 1106 Boylston Street.	Walker-Gordon Laboratory Company, owner; John Nichols, manager.	100	Boston and vicinity.
Brimfield, Clarence B. Brown's farm.	Clarence B. Brown, owner and manager.	21	West Warren.
Brockton, Montello Station, Dutchland Farm.	Fred F. Field, owner; Earl D. Upton, manager.	70	Brockton.
Brookline, Louis Cabot estate, .	Louis Cabot, owner; R. Barkhouse, manager.	10	Brookline.
Chilmark, West Tisbury, P. O. Oakview Farm.	J. F. Adams, owner and manager.	17	Vineyard Haven and Edgartown.
Dighton, Rock Farm,	J. W. Earle, owner; Ralph Earle, manager.	15	Fall River.
Dorchester, Codman Farm, . .	Watson B. Fearing, owner and manager.	125	Boston.
East Lynn,	J. D. Coombs, lessee and manager.	3	East Lynn.
East Walpole, Lewis Farm, . .	Geo. A. Plympton, owner,	80	Boston and vicinity, by Alden Brothers Company.
Everett, Joseph H. Cannell's farm,	Joseph H. Cannell, owner and manager.	7	Everett.
Everett, Thomas F. Leavitt's farm,	Thomas F. Leavitt, owner and manager.	8	Everett.
Fairhaven, Dana Farm,	Eliza N. and Edith Dana, owners and managers.	52	Fairhaven, Marion and Mattapoisett (in summer).
Fairhaven, Lewis F. Blossom's farm,	Lewis F. Blossom, owner and manager.	12	Fairhaven.
Framingham, Millwood Farm, .	Mrs. E. F. Bowditch, owner; J. P. Bowditch, manager; F. E. Barrett, superintendent.	178	Boston and Wellesley.
Framingham, Waverney Farm, .	Reginald W. Bird, owner; A. E. White, manager.	50	Boston.
Framingham, Cherry Meadow Farm.	D. M. and E. F. Belches, owners; E. F. Belches, manager.	35	Framingham.
Franklin, Ray Farm,	E. K. Ray estate, owner; Joseph G. Ray, trustee and manager.	100	Boston, by Elm Farm Company.
Gardner, Lakeside Farm, . . .	J. Henry Ware, owner and manager.	7	Gardner.
Gardner, Otto Wickman's farm, .	Otto Wickman, owner and manager.	5	Gardner.
Gloucester, Howard P. Lane's farm,	Howard P. Lane, owner and manager.	50	Gloucester.
Gloucester, H. Wallace Lane's farm,	H. Wallace Lane, owner and manager.	30	Gloucester.
Gloucester, Peter Hagstrom's farm,	Peter Hagstrom, owner and manager.	5	Gloucester.
Granby, C. W. Ball's farm, . .	C. W. Ball, owner and manager.	29	Holyoke.

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price — Continued.

LOCATION, FARM.	Owner and Manager.	Approximate Number of Cows.	Where marketed.
Greenfield, Wayside Farm, . . .	Frank H. Reed, owner; Mr. Purrington, manager.	25	Greenfield.
Groton, G. W. Greenhalge's farm, .	G. W. Greenhalge, owner and manager.	25	Boston and vicinity, by D. Whiting & Sons.
Hamilton, Miles River Farm, . .	Maxwell Norman, owner and manager; C. E. Johnson, superintendent.	60	Boston.
Hardwick, Mixter Farm, . . .	Mary A. Mixter, owner; Dr. Samuel J. Mixter, manager; S. R. Parker, superintendent.	200	Boston.
Haverhill (Bradford District), J. B. Sawyer's farm.	J. B. Sawyer, owner and manager.	—	Haverhill.
Haverhill (Bradford District), Cedar Crest Farm.	C. Herbert Poore, owner and manager.	20	Haverhill.
Haverhill, North Broadway Milk Farm.	E. A. Emerson, owner and manager.	35	Haverhill.
Haverhill (P. O. East Haverhill), Fred Kimball's farm.	Fred Kimball, owner; Leonard Kimball, manager.	35	Haverhill.
Holyoke, Whiting Farm, . . .	W. F. Whiting, owner; John F. Richardson, manager.	20	Holyoke.
Kingston, Miss Helen Holmes' farm,	Miss Helen Holmes, owner and manager.	20	Kingston.
Lee, John Goodrich's farm, . . .	John Goodrich, owner and manager.	40	Lee.
Leominster, Boutelle Farm, . . .	E. H. Boutelle, owner and manager.	30	Leominster.
Leominster, Sholan Farm, . . .	Paul Washburn, owner; A. G. Hollquist, manager.	40	Leominster.
Longmeadow, Hillbrow Farm, . .	H. M. Burt, owner and manager.	20	Springfield.
Lowell, Hood Farm, . . .	C. I. Hood, owner; J. E. Dodge, manager.	120	Lowell.
Ludlow, E. E. Chapman's farm, . .	Edward E. Chapman, owner and manager.	22	Ludlow and Indian Orchard.
Lunenburg, Sunnyside Farm, . .	George M. Proctor, owner; Fred A. Miller, manager.	48	Fitchburg.
Lynnfield, N. F. McCarthy's farm,	N. F. McCarthy, owner; Eben Holmes, manager.	30	Wakefield.
Marlborough, Fairview Farm, . .	Elmer D. Howe & Son, owners and managers.	10	Marlborough.
Medford, Mystic Valley Farm, 75 Arlington Street.	John J. Mulkevin, owner and manager.	16	Medford.
Medford, Hillside Farm, 20 Gow Street.	Alberton Harris, owner and manager.	10	Medford.
Methuen, Bragdon Farms, . . .	E. L. Bragdon, owner and manager.	30	Lawrence.
Methuen, Cox Farms, . . .	Louis Cox, owner; L. Coburn, manager.	31	Lawrence.
Methuen, Howe Farm, . . .	E. D. Taylor, owner and manager.	50	Lawrence.
Methuen, Spring Valley Farms, .	Fred Miller, owner and manager.	50	Lawrence.
Methuen, S. W. Williams' farm, .	S. W. Williams, owner and manager.	30	Lawrence.
Millis, Lowland Farm, . . .	E. F. Richardson, owner and manager.	25	Boston.

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price — Continued.

LOCATION, FARM,	Owner and Manager.	Approximate Number of Cows.	Where marketed.
Milton, Highland Farm, . . .	Patriquin & Newton, lessees; George Patriquin, manager.	65	Milton.
Needham, K. E. Webb's farm, . .	Kenneth E. Webb, owner and manager.	31	Needham.
Newton (P. O. Waban), W. B. McMullin's farm.	William B. McMullin, owner and manager.	17	Needham and Newton.
Newtonville, Willow Farm, 120 Farwell Street.	D. F. Smith, owner and manager.	48	Newton, Brookline and Boston.
Norfolk, Meadowsides Farm, . . .	T. D. Cook & Co., owners and managers.	35	Boston.
North Amherst, The Elms, . . .	R. D. Dickinson, owner and manager.	30	Amherst.
North Attleborough, Halliday Farm,	Fred F. Halliday, owner; Robert C. Halliday, manager.	9	Pawtucket, R. I.
North Falmouth, Manuel G. White's farm.	Manuel G. White, owner and manager.	6	North Falmouth.
North Grafton, Bonnybrook Farm,	Everett N. Kearney, owner and manager.	60	Worcester.
North Tewksbury, Mountjoy, . .	Miss Florence Nesmith, owner; C. E. Lougee, manager.	50	North Tewksbury.
Northampton, W. J. LaFleur's farm,	W. J. LaFleur, owner and manager.	11	Northampton.
Oak Bluffs, Woodsedge Farm, . .	F. W. Chase, owner and manager.	20	Oak Bluffs.
Paxton, E. G. Richard's farm, . .	E. G. Richards, owner and manager.	40	Worcester, by C. Brigham Company.
Paxton, Echo Farm,	W. J. Woods, owner; Joseph Graham, manager.	40	Worcester, by C. Brigham Company.
Pepperell, George Shattuck's farm,	George Shattuck, owner and manager.	75	Boston and vicinity, by D. Whiting & Sons.
Pittsfield, Abby Lodge,	A. W. Cooley, owner; Mr. Carlson, manager.	35	Boston.
Pittsfield, Mr. Bardwell's farm, .	Mr. Bardwell, owner and manager.	14	Pittsfield.
Pittsfield, E. W. Page's farm, . .	E. W. Page, owner and manager.	8	Pittsfield.
Revere, Mrs. M. L. Mahoney's farm,	Mrs. M. L. Mahoney, owner; J. J. Mahoney, manager.	25	Malden.
Saugus, Oaklandvale Farm, . . .	Frank P. Bennett, owner and manager.	112	Lynn.
South Lincoln, South Lincoln Dairy Company.	South Lincoln Dairy Company, owner; W. A. Blodgett, manager.	220	Boston, Cambridge and Brookline.
South Natick, Carver Hill Farm, .	Carver Hill Farms, Inc., Austin Potter.	75	Wellesley, Boston, Natick, Needham and Dover.
Southville, Waumesit Farm, . . .	R. F. Parker, owner and manager.	20	Boston and vicinity, by C. Brigham Company.
Sherborn, H. N. Brown's farm, . .	H. N. Brown, owner and manager.	50	Boston.
Sherborn, Dexter Farm,	George T. Dexter, owner and manager.	23	Boston and vicinity, by Alden Brothers Company.
Sherborn, J. M. Merriam's farm, .	J. M. Merriam, owner and manager.	40	Boston.
Sterling, Twin Oaks Farm (P. O. Pratt's Junction).	James F. Pratt, owner and manager.	75	Milk, Boston; cream, Worcester.

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price — Concluded.

LOCATION, FARM.	Owner and Manager.	Approximate Number of Cows.	Where marketed.
Stoughton, Tobey Farm, . . .	E. B. Hutchins, owner and manager.	15	Brockton.
Taunton, George Soper's farm, . .	George Soper, owner and manager.	30	Taunton.
Waltham, Pleasantdale Farm, . . .	C. U. Hubbard, owner and manager.	35	Weston.
Wayland, Perkins' Estate, . . .	S. N. Sanders, manager, .	12	Waltham.
Westfield, Woronoak Farm, . . .	Edgar L. Gillett, owner; N. J. Weidhaas, manager.	12	Westfield.
Weston, Charles Merriam's farm, . .	Charles Merriam, owner and manager.	51	Waltham.
Westwood, Fox Hill Farm, . . .	Joshua Crane, owner; L. W. Jackman, manager.	100	Boston.
West Newton and Barre, Wauwinet Farm.	George H. Ellis, owner; P. F. Staples and R. M. Handy, managers.	400	Boston, Brookline and Newton.
Warren, Maple Farm,	J. R. Blair, owner and manager.	27	Boston, by C. Brigham Company.
Woburn, John Day's farm, . . .	John Day, owner and manager.	18	Winchester.
Worcester, Pleasant View Farm, . .	Warren C. Jewett, owner and manager.	40	Worcester.
Worcester, Lewis J. Kendall's farm,	Lewis J. Kendall, owner and manager.	40	Worcester.
Worcester, Intervale Farm, . . .	J. Lewis Ellsworth, owner and manager.	14	Worcester.
Worcester, Village Farm,	H. B. Prentice, owner and manager.	30	Worcester.

NOTE. — Deerfoot Farm Dairy, office 9 Bosworth Place, Boston, with milk depots at both Southborough and Northborough, sells milk of superior quality and cleanliness at a price above that of ordinary market milk, and handles the product of 129 dairy farms, averaging about 10 cows each, located in Southborough, Northborough, Westborough and Holliston. Most of these farms, therefore, at some time during the year come properly within the requirements of this list.

List of Massachusetts Dairy Farms making Certified Milk.

NAME, LOCATION.	Owner and Manager.	Ap- prox- imate Num- ber of Cows.	Certified by —	Where marketed.
Cedar Hill Farm, Waltham,	Miss Cornelia Warren, owner; Charles Cahill, manager.	215	Cambridge Medical Commission.	Waltham, Cambridge, Boston.
Cedar Crest Farm, Waltham.	John C. Runkle, owner; Louis W. Dean, manager.	90	Cambridge Medical Commission.	North Shore, Cambridge, Boston.
Cherry Hill Farm, Beverly,	H. P. Hood & Sons, owners; O. H. Perrin, managers.	80	Medical Milk Commission of Boston.	Boston, North Shore, Lawrence.
A. D. Davis' farm, Sheffield,	A. D. Davis, owner and manager.	60	—	Some in Great Barrington; balance outside of State.
Indian Bridge Farm, Weyland.	Edmund H. Sears, owner; Walter Jauncey, Jr., manager.	16	Cambridge Medical Milk Commission.	Waltham.
Ledyard Farm, Andover,	J. A. & W. H. Gould, owners and managers.	50	Malden Medical Commission.	Malden.
Massachusetts Agricultural College Farm, Amherst.	Massachusetts Agricultural College, J. A. Foord.	65	Medical Milk Commission of Boston.	Boston.
Oaks Farm, Cohasset,	C. W. Barron, owner; W. E. Stilwell, manager.	50	Medical Milk Commission of Cohasset.	Cohasset.
Oliver Prescott's farm, Dartmouth (P. O. North Dartmouth).	Oliver Prescott, owner; Harry W. Martin, manager.	20	New Bedford Medical Commission.	New Bedford.
Prospect Hill Farm, Essex,	J. A. & W. H. Gould, owners and managers.	175	Medical Milk Commission of Boston.	Boston, Brookline, Jamaica Plain, North Shore.
Seven Gates Farm, North Tisbury.	W. L. Webb, owner; O. L. Curtis, manager.	20-25	Medical Milk Commission of West Tisbury, Inc.	Martha's Vineyard.
Walter A. White's farm, Acushnet.	Walter A. White, owner and manager.	30	New Bedford Medical Commission.	New Bedford.

LIST OF LOCAL MILK INSPECTORS.

Milk Inspectors for Massachusetts Cities, 1914.

Attleboro,	Caleb E. Parmenter.
Beverly,	Henry E. Dodge, 2d.
Boston,	Prof. James O. Jordan.
Brockton,	George E. Bolling.
Cambridge,	Dr. W. A. Noonan.
Chelsea,	Dr. W. S. Walkley.
Chicopee,	C. J. O'Brien.
Everett,	E. Clarence Colby.
Fall River,	Henry Boisseau.
Fitchburg,	John F. Bresnahan.
Gloucester,	Dr. G. E. Watson.
Haverhill,	Dr. Homer L. Conner.

Holyoke,	Daniel P. Hartnett.
Lawrence,	Dr. J. H. Tobin.
Lowell,	Melvin F. Master.
Lynn,	George A. Flanagan.
Malden,	J. A. Sandford.
Marlborough,	John J. Cassidy.
Medford,	Winslow Joyce.
Melrose,	R. N. Hoyt.
New Bedford,	Herbert Hamilton, D.V.S.
Newburyport,	Dr. R. D. Hamilton.
Newton,	Arthur Hudson.
North Adams,	Henry A. Tower.
Northampton,	George R. Turner.
Pittsfield,	Bernard M. Collins, V.M.D.
Quincy,	Daniel Scourler.
Revere,	Joseph E. Lamb, M.D.
Salem,	John J. McGrath.
Somerville,	Herbert E. Bowman.
Springfield,	Stephen C. Downs.
Taunton,	Lewis I. Tucker.
Waltham,	Arthur L. Stone, M.D.
Woburn,	Edward P. Kelly, M.D.
Worcester,	Gustaf L. Berg.

Milk Inspectors for Massachusetts Towns, 1914.

Adams,	Dr. A. G. Potter.
Amesbury,	J. L. Stewart.
Andover,	Franklin H. Stacey.
Arlington,	Dr. L. L. Pierce.
Athol,	John H. Meaney.
Barnstable,	George T. Mecarta.
Belmont,	Thomas F. Harris.
Brookline,	W. E. Ward.
Canton,	R. N. Hoyt.
Clinton,	Gilman L. Chase.
Cohasset,	D. W. Gilbert, D.V.S.
Concord,	Joseph Dee, Jr.
Dedham,	Edward Knobel.
Easthampton,	George L. McEvoy.
Fairhaven,	Bertha F. Carl Frommell, M.D.
Framingham,	R. N. Hoyt.
Gardner,	Clifford W. Shippee.
Greenfield,	George P. Moore.
Hudson,	William H. Clark.
Lancaster,	George E. Howe.
Leominster,	William H. Dodge.
Ludlow,	A. L. Bennett, D.V.S.

Marblehead,	Andrew W. Stone.
Middleborough,	Dr. William H. Haskell.
Millbury,	Arthur A. Brown.
Milton,	W. C. Tucker.
Monson,	Dr. E. W. Capen.
Needham,	R. N. Hoyt.
North Attleborough,	Hugh Gaw, V.S.
Palmer,	Edward P. Brown.
Peabody,	H. S. Pomeroy, M.D.
Plainville,	John C. Eiden.
Reading,	C. H. Playden, M.D.
Salisbury,	John F. Pike.
Sandwich,	J. E. Holway.
Southbridge,	Albert R. Brown.
South Hadley Falls,	George F. Boudreau.
Spencer,	James A. Spencer.
Stoneham,	William M. Balmer.
Swampscott,	Herbert D. Smith.
Wakefield,	Harry A. Simmonds.
Ware,	Fred E. Marsh.
Watertown,	R. N. Hoyt.
Wellesley,	R. N. Hoyt.
Westborough,	Charles H. Reed.
Westfield,	William H. Porter.
Weston,	R. N. Hoyt.
West Springfield,	Norman T. Smith.
Williamstown,	G. S. Jordan, V.S.
Winchendon,	Dr. G. W. Stanbridge.
Winchester,	Maurice Dinneen.
Winthrop,	Smith A. Mowry.

CREAMERIES, MILK DEPOTS, ETC.

Co-operative Creameries.

NUMBER AND LOCATION.	Name.	Superintendent or Manager.
1. Ashfield,	Ashfield Creamery,	William Hunter, manager.
2. Belchertown,	Belchertown Creamery,	M. G. Ward, president.
3. Cummington,	Cummington Creamery,	D. C. Morey, superintendent.
4. Easthampton,	Easthampton Creamery,	E. B. Clapp, treasurer.
5. Egremont (P. O. Great Barrington).	Egremont Creamery,	E. G. Tyrell, manager.
6. Monterey,	Berkshire Hills Creamery,	F. A. Campbell, treasurer.
7. Northfield,	Northfield Creamery,	C. C. Stearns, treasurer.
8. Shelburne,	Shelburne Creamery,	Ira Barnard, manager.
9. Westfield,	Wyben Springs Creamery,	C. H. Kelso, manager.

Proprietary Creameries.

NUMBER AND LOCATION.	Name.	Owner or Manager.
1. Amherst,	Amherst Creamery Company, .	R. W. Pease, manager.
2. Amherst,	Fort River Creamery, . . .	Clarence M. Wood, manager (estate of E. A. King, owner).
3. Brimfield,	Crystal Brook Creamery, . .	F. N. Lawrence, proprietor.
4. Great Barrington, . . .	Edgewood Creamery, . . .	C. W. Freehan, manager.
5. Heath,	Cold Spring Creamery, . . .	I. W. Stetson & Son.
6. Hinsdale,	Hinsdale Creamery,	Walter C. Solomon, pro- prietor.

Educational.

LOCATION.	Name.	Manager.
Amherst,	Dairy Industry Course, Massachu- setts Agricultural College.	W. P. B. Lockwood, pro- fessor in charge.

Principal Milk-distributing Depots.

NAME.	Location.	Manager.
Acton Farms Milk Company, .	Somerville, Windsor Street, . .	Arthur B. Parker, treas- urer.
Alden Brothers Company, . .	Boston office, 1171 Tremont Street; depot, 24-28 Duncan Street.	Charles L. Alden, presi- dent; John A l d e n , treasurer.
Anderson Brothers,	Worcester, Eckman Street, . . .	Anderson Brothers.
Boston Ice Cream Company, .	Roxbury, 40 King Street, . . .	Harry M. Hardwick, president and treas- urer.
Boston Jersey Creamery, . .	Boston, 9 Fulton Street, . . .	Theo. P. Grant, presi- dent and manager.
Brigham, C., Company, . . .	Cambridge, 158 Massachusetts Avenue.	John K. Whiting.
Brigham, C., Company, . . .	Worcester, 9 Howard Street, . .	C. Brigham Company.
Bristol Creamery Company, .	Boston, 132 Central Street, . . .	William L. Johnson.
Columbia Creamery,	Springfield, 117 Lyman Street, .	H. A. Mosely.
Deerfoot Farms Dairy, . . .	Boston, 132 Central Street; depots at Northborough and Southbor- ough.	S. H. Howes.
Elm Farm Milk Company, . .	Boston, Wales Place,	James H. Knapp, treas- urer.
Franklin Creamery Company,	Boston, 147 Harrison Avenue, . .	Tait Brothers.
Hampden Creamery Company,	Everett, Orient Avenue,	Frank H. Adams, treas- urer.
Hood, H. P., & Sons,	Boston, 494 Rutherford Avenue; branches, 24 Anson Street, Forest Hills; 886 Broadway, Chelsea. Lynn, 193 Alley Street. Malden, 425 Main Street. Watertown, 479 Pleasant Street. Lawrence, 629 Common Street.	Charles H. Hood.

Principal Milk-distributing Depots — Concluded.

NAME.	Location.	Manager.
Learned, G. S. (Fitchburg Creamery).	Fitchburg, 26 Cushing Street, .	G. S. Learned.
Lyndonville Creamery Association.	Watertown, 86 Elm Street, . .	Willis C. Conner, manager.
Nash, Charles A., . . .	Springfield, 120 Oakland Street, .	Charles A. Nash, manager.
Newhall, J. A., . . .	Newburyport, 32 Monroe Street, .	J. A. Newhall.
Perry, A. D.,	Worcester, Kansas Street, . . .	A. D. Perry.
Plymouth Creamery Company,	Boston, 268-270 State Street, . .	John W. Davies.
Prentice, H. H., & Co. (Berkshire Creamery).	Pittsfield, Crane Avenue, . . .	H. H. Prentice.
Rockingham Milk Company, .	Charlestown, Boston office, Hancock Square; depot 330 Rutherford Avenue.	Rolan H. Toothaker, president.
Somers Creamery Company, .	Springfield, 178 Dwight Street, .	W. M. Cushman.
Springfield Creamery, . . .	Springfield, Main Street, . . .	F. B. Allen, proprietor.
Tait Brothers,	Springfield, 37 Vinton Street, . .	Tait Brothers, proprietors.
Turner Centre Dairying Association.	Boston office, 63, 67 and 69 Endicott Street.	Irven L. Smith, manager.
Wachusett Creamery, . . .	Worcester, 6 Lincoln Street, . . .	E. H. Thayer & Co., proprietors.
Whiting, D., & Sons, . . .	Boston, 570 Rutherford Avenue, .	George Whiting.

Milk Laboratory.

Walker-Gordon Laboratory, .	Boston, 1106 Boylston Street, .	George W. Franklin.
-----------------------------	---------------------------------	---------------------

Receiving Depot for Milk, for Shipments to New York City.

Willow Brook Dairy Company,	Sheffield,	Frank Percy.
-----------------------------	----------------------	--------------

ENCOURAGEMENT OF PRACTICAL DAIRYING EXPENSES, MARCH TO NOVEMBER.

Agents, expenses,	\$849 03
General agent, traveling and necessary expenses,	544 88
Judge, compensation,	50 00
Printing, photography, postage and supplies,	196 47
Clerical assistance,	3 60
Total,	\$1,643 98
Prizes,	3,735 30
Total expenditures,	\$5,379 28

REGULAR BUREAU EXPENSES.

The following is a classified statement of the expenses for the year ending November 30, 1914:—

Bureau, compensation and traveling expenses,	\$761 86
Agents, compensation,	2,988 66
Agents, traveling expenses and samples purchased,	2,093 63
General agent, traveling and necessary expenses,	213 59
Analysts, analyses, tests, court attendance,	686 00
Printing, photography, postage and supplies,	913 97
Clerical assistance,	339 95
<hr/>	
Total,	\$7,997 66

P. M. HARWOOD,

General Agent.

Accepted and adopted as the report of the Dairy Bureau.

CHAS. M. GARDNER.

GEORGE W. TRULL.

OMER E. BRADWAY.

Public Document

No. 60

DISC
1915
B

TWENTY-FIFTH ANNUAL REPORT
OF THE
DAIRY BUREAU
OF THE
MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 5, 1916.



BOSTON:
WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
32 DERNE STREET.
1916.

TWENTY-FIFTH ANNUAL REPORT

OF THE

Mass:
- DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 5, 1916.



BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
32 DERNE STREET.

1916.

APPROVED BY
THE STATE BOARD OF PUBLICATION.

614.32M3

1132

1915

B

DAIRY BUREAU—1915.

CHARLES M. GARDNER, WESTFIELD, *Chairman.*

GEORGE W. TRULL, TEWKSBURY, P. O. LOWELL, R. F. D.

OMER E. BRADWAY, MONSON.

Secretary.

WILFRID WHEELER, *Executive Officer and Secretary of the State
Board of Agriculture.*

General Agent.

P. M. HARWOOD,

ADDRESS, ROOM 136, STATE HOUSE, BOSTON.

The Commonwealth of Massachusetts.

REPORT OF THE DAIRY BUREAU.

The three years of effort in carrying out the provisions of the 1913 resolve, providing for the encouragement of practical dairying, show an increased demand for this work.

In 1913 there were 151 entries in the clean milk contest (owners only). In 1914 there were 229 entries in Class A (owners); in 1915 there were 277 entries. In 1914 there were 22 entries in Class B (juniors); in 1915 there were 48 entries. In 1914 there were 54 entries in Class C (employees); in 1915 there were 69 entries. The total entries for each year were: 1913, 151; 1914, 305; 1915, 394. The total entries for the three years was 850. Most gratifying of all, the milk samples have shown a steady improvement in point of cleanliness year by year.

On the other hand, in the police work there has been found a decrease in the number of violations of law in the sale of dairy products and their imitations. In 1913 there were 149 cases for violations of dairy laws entered in court; in 1914, 129; and in 1915, 64. The falling off of the number of cases entered in court is in no way due to relaxation of effort upon the part of the Bureau or its agents, but is entirely due to the fact that there were fewer actual violations of laws.

The total number of inspections of stores, wagons, etc., in 1915 was 7,690. The average annual inspections for ten years, 1903 to 1912, inclusive, was 6,556. The average annual cases in court for the same period was 196. The annual inspections for three years, 1913 to 1915, inclusive, averaged 7,316. The cases in court for the same period averaged 121.

In carrying out the provisions of chapter 96 of the Resolves of 1913, appropriating \$15,000 for the encouragement of prac-

tical dairying, covering a period of three years, the following distribution of funds was made:—

In 1913 prizes aggregating \$3,000 were offered which were divided as follows: in clean milk contest, \$2,550; in a contest of dairies best protected from flies, \$450.

In 1914 prizes aggregating \$4,439 were offered which were divided as follows: in clean milk contest, \$3,389; farm accounting, \$300; dairy barns, \$300; dairy farm operations, \$450.

In 1915 prizes aggregating \$4,321 were offered in the clean milk contest.

The total amount of prizes actually paid during the three years is, in 1913, \$3,000; 1914, \$3,735.30; 1915, \$4,261, making a total of \$10,996.30, and leaving for the carrying on of the work \$4,003.70, all of which has been expended.

It was found after two years' experience that by far the most popular of our efforts in this work was the clean milk contest, so called, an educational and financial method of encouraging the *keeping of dirt out of milk*. On this account it was deemed best that the unexpended balance of the money appropriated for this purpose on hand at the beginning of 1915 should be expended in the clean milk contest. No other State has ever undertaken work of this character, and after three years' effort in this line, coupled with other work done by the State and various organizations within the State, it is a safe assumption that Massachusetts-produced milk is to-day as clean or cleaner than that produced in any other State of the Union. This is a matter of vital importance to our dairymen, for unless the Massachusetts product is of the highest quality and cleanliness, and commands the highest price in the market, there is small hope for the future of our dairy industry. Unlimited competition from those sections possessing great natural advantages for milk production on a large scale will prove too strong for us to withstand. *Quality, cleanliness, freshness, price* must be the slogan of the Massachusetts milk-producing farmer if he will succeed. In the future the size of his business will be measured by the consumer's confidence in and willingness to buy and pay for milk of this character. Every effort should be used to prevent milk produced outside the State, and especially long-hauled milk, from getting or keeping any undue advantage by reason of rates or otherwise.

If this country would restore and maintain her dairy industry on a sound and profitable basis, she must protect it by proper and reasonable tariff. And if this Commonwealth would maintain her milk industry she must commercialize two things, viz., *freshness* and *Massachusetts* as applied to her milk product.

Massachusetts should further encourage by a large annual appropriation the production of clean milk and the development of live-stock husbandry within her borders. A resolve to this end, and also an act broadening the powers of the Dairy Bureau, have been introduced in the Legislature by Secretary Wheeler.

It is exceedingly gratifying to note the change of opinion which is slowly but surely coming over the general public in regard to the milk question. A few years ago health cranks by their "scare talk" led the public to believe that milk was the most dangerous article of food on the market. To-day the same public sees clearly the fallacy of such ideas, and is beginning to appreciate the importance of the common-sense side of the question.

A few years ago reformists were flooding the Legislature with bills, thoroughly imbued with the idea that legislation was the panacea for all milk evils. To-day it is realized that milk, in comparison with other animal foods, is not only the most important, but is by far the cheapest, of them all, and is being sold by the producer at too low a price. If we look below the surface for the reason, we find that dairy cows are and always have been kept in connection with some other form of agriculture, hence not of necessity on an independent paying basis; that the general public has not appreciated the food value of milk; and further, that the greatest loss to the dairy farmer frequently comes in the price which he obtains for skim milk.

Milk fat usually sells for somewhere near what it is worth because of the great demand for cream, butter, ice cream, etc.; not so with skim milk. Skim milk is used for various purposes commanding all the way from 30 to 70 cents per hundred pounds in price. When it is realized that the top price of 70 cents per hundred pounds is only a cent and a half per quart for skim milk, it is readily seen that this food is not selling for anywhere near its real value. Failure to take this into proper

account is one mistake which the seller of whole milk frequently makes. Skim milk skilfully fed to pure-bred stock or to laying hens will often net the farmer 3 cents per quart. Now, if the consumption of skim milk could be so increased that the demand therefor would raise the price to a point where the farmer would never have to take less than 3 cents per quart for this portion of his milk at the dairy, a long stride would be taken towards solving the milk problem. Then, too, many farmers who have been in the habit of making summer milk for the manufacture of butter and cheese, when changing to selling market milk, have not counted the cost of making an even production of milk the year around and of reproducing summer conditions in midwinter. These, and many other matters which might be mentioned, go a long way in accounting for the cost of making milk, particularly in a State where the requirements are so rigid as they are in Massachusetts.

People often wonder why it is that it costs more to produce milk in Massachusetts than in some other sections of the country. It costs more to make milk in some sections of Massachusetts than it does in other sections of the same State. The reasons are to some extent the same in both instances. Soil, moisture conditions, small fields, stony fields, small herds, etc., are all important factors in this question.

In educational work the chairman of the Bureau delivered six, the general agent twenty-five, and Mr. Lombard two lectures. These lectures were all upon subjects relating to dairying. The Bureau has made several inspection trips covering creameries, milk plants, important dairy farms, etc., within the State. The general agent, besides making a trip to New York State to see how milk was handled there, made a special trip to northern Vermont and Canada, studying the conditions in those localities.

The general agent has made a new revision of the dairy laws of Massachusetts, with a Superior Court digest thereon, which has been published, and has prepared a new edition of "Breeders and Owners of Pure-bred Dairy Cattle in Massachusetts," which is now in the hands of the State printers. Leaflet B on milk has been rewritten and published. A new map of the milk supply of New England has been prepared and

is now in the office of the State Board of Agriculture. The result of the 1915 clean milk contest is published under separate cover.

Mr. Lombard, agent of the Dairy Bureau, attended the meeting of the International Association of Dairy and Milk Inspectors at Washington, District of Columbia, where he read a paper on "The Clean Milk Contest of Massachusetts." This paper was well received, and Mr. Lombard was elected first vice-president of the association.

DAIRY COWS.

There were assessed in Massachusetts on April 1, 1915, 145,016 cows. On April 1, 1914, there were assessed 147,209 cows. This shows a decline in twelve months of 2,183 cows. There were killed in the meantime on account of foot-and-mouth disease 2,109 cattle, a very large proportion of which were milch cows. This showing indicates that the actual decline in dairy cows, irrespective of the slaughter on account of foot-and-mouth disease, was very small.

The 1915 assessment of dairy cows in Maine, New Hampshire and Vermont showed a considerable increase over the assessment of 1914, which is fully accounted for by the fact that shipments of cattle from those States were held up on account of quarantine regulations imposed in consequence of the outbreak of foot-and-mouth disease.

CONDENSED MILK.

Figures furnished by the Boston Chamber of Commerce concerning the amount of condensed milk handled in Boston in 1915 show an increase of 4,561 barrels and a decrease of 23,129 cases over 1914. Full data concerning this report indicate, on the whole, an increase in the consumption of these products. (See table on page 15.)

OLEOMARGARINE.

The number of oleomargarine licenses in force in the State in November, 1914, was 818. The exact number of licenses in 1915 is not at this date available from the office of the Collector

of Internal Revenue, on account of delay occasioned by the removal of that department from one building to another, but it is understood to be much less than in 1914. In Boston the number of packages reported by the Chamber of Commerce in 1913 was 127,994; in 1914 it was 99,999; and in 1915 it was 69,041. This shows clearly that there has been a decline in the use of oleomargarine during the last three years in Massachusetts, notwithstanding the fact that the total production in the United States in 1915 exceeded that in 1914 by 1,788,772 pounds, there being 145,810,048 pounds of oleomargarine produced in 1915, while in 1914 there were only 144,021,276 pounds produced. It should be noted, however, that this excess practically measures the excess of export trade during the year. (See table on page 13.)

RENOVATED BUTTER.

In 1914 there were 32,470,030 pounds of renovated butter produced in the United States, while in 1915 there were 39,056,180 pounds, showing an increase of 6,585,150 pounds. (See table on page 13.)

BUTTER.

The average wholesale price of butter in the Boston market for 1914, as reported by the Chamber of Commerce, was 29.4 cents, and in 1915, 29.2 cents, showing a decrease of only .2 of a cent.

The annual consumption of butter, Boston output, during 1914 was 72,922,533 pounds, and in 1915, 81,617,503 pounds, showing an increase of 8,694,970 pounds. (Details will be found on page 14.)

PERSONNEL OF THE BUREAU.

The personnel of the Bureau is as follows: Charles M. Gardner of Westfield, chairman, George W. Trull of Tewksbury and Omer E. Bradway of Monson. The executive force, agents, analysts, etc., are as follows: executive officer and secretary, Wilfrid Wheeler; general agent, P. M. Harwood; analysts,

B. F. Davenport, M.D., Boston, and Gilbert L. Clark, Emerson Laboratory, Springfield; agent, A. W. Lombard; and four others have been temporarily employed.

SUMMARY OF POLICE WORK.

Total number of inspections,	17,690
Number of inspections where no samples were taken,	6,287
Number of samples of butter, oleomargarine and renovated butter, all purchased,	1,397
Number of samples of milk and cream,	55
Cases entered in court,	64
Addresses by general agent and others,	33

Cases prosecuted during the twelve months ending November 30, 1915, by months and courts, with law violated, and results, are as follows: —

COURT.	Month.	Num-ber.	Law violated.	Con- victed.	Nol- pressed.
Quincy, East Norfolk District,	December, .	8	6 oleomargarine, 2 renovated butter.	4	4
Salem, First Essex District, .	January, .	4	2 oleomargarine, 2 renovated butter.	4	—
New Bedford, Third Bristol District.	January, .	1	1 oleomargarine, .	1	—
Pittsfield, Central Berkshire District.	January, .	8	8 oleomargarine, .	8	—
North Adams, Northern Berkshire District.	January and February.	10	4 oleomargarine, 6 renovated butter.	10	—
Springfield Police,	February, .	2	2 renovated butter,	2	—
Waltham, Second Eastern Middlesex District.	February, .	1	1 milk,	1	—
Fall River, Second Bristol District.	February, .	1	1 condensed milk,	1	—
Attleboro, Fourth Bristol District.	March, .	2	2 renovated butter,	2	—
Lowell Police,	March, .	8	2 oleomargarine, 6 renovated butter.	8	—
Webster, First Southern Worcester District.	March, .	6	4 oleomargarine, 2 renovated butter.	6	—
Southbridge, First Southern Worcester District.	March, .	4	2 oleomargarine, 2 renovated butter.	4	—
Malden, First Eastern Middlesex District.	April, . .	1	1 renovated butter,	1	—
East Brookfield, Western Worcester District.	April, . .	1	1 renovated butter,	1	—
Worcester, Central Worcester District.	April, . .	1	1 milk,	1	—
Chicopee Police,	April, . .	5	5 oleomargarine, .	5	—
Ware, Eastern Hampshire District.	June and October.	1	1 milk,	1	—

NOTE. — The Bureau is indebted to the milk inspectors of Massachusetts for assistance which has resulted in court cases.

¹ There were 49 extra samples taken during the year, therefore this number is 49 less than the sum of the next three items.

The charges in the several cases entered in court for the year ending November 30, 1915, have been as follows: —

Furnishing oleomargarine in restaurants, etc., without notice to guests,	33
Selling renovated butter in unmarked packages,	26
Selling adulterated milk,	2
Selling milk below standard,	1
Selling condensed milk improperly marked,	1
Selling oleomargarine in unmarked ¹ packages,	1

64

The following table shows the inspections without samples, and the number of samples taken during the past thirteen years: —

YEARS.	Inspections without Samples.	Samples.
1903-14 (inclusive),	66,855	19,994
1915,	6,287	1,452
Total for thirteen years,	73,142	21,446
Average,	5,626	1,649

OLEOMARGARINE.

The following figures, taken from the annual report of the United States Commissioner of Internal Revenue for 1915, show the production, withdrawn tax paid, withdrawn for export, and withdrawn for use of the United States, of the two classes of oleomargarine, as defined by act of May 9, 1902, covering the period of thirteen years since it went into effect on July 1, 1902: —

¹ In these cases oleomargarine was sold when butter was asked for, but the charge was made in this way for convenience.

Oleomargarine (Pounds).

YEAR.	PRODUCT TAXED AT RATE OF 10 CENTS PER POUND.				PRODUCT TAXED AT RATE OF ¼ CENT PER POUND.			
	Pro- duced.	With- drawn Tax paid.	With- drawn for Export.	With- drawn Free of Tax for Use of the United States.	Pro- duced.	With- drawn Tax paid.	With- drawn for Export.	With- drawn Free of Tax for Use of the United States.
1903,	5,710,407	2,312,493	3,334,969	—	67,573,689	66,785,796	151,693	—
1904,	3,785,670	1,297,068	2,504,940	—	46,413,972	46,397,984	123,425	—
1905,	5,560,304	3,121,640	2,405,763	—	46,427,032	46,223,691	137,670	—
1906,	4,888,986	2,503,095	2,422,320	—	50,545,914	50,536,466	78,750	—
1907,	7,758,529	5,009,094	2,695,276	—	63,608,246	63,303,016	129,350	—
1908,	7,452,800	4,982,029	2,522,188	—	74,072,800	73,916,869	109,480	—
1909,	5,710,301	3,275,968	2,403,742	—	86,572,514	86,221,310	112,958	—
1910,	6,176,991	3,416,286	2,767,195	—	135,685,289	135,159,429	97,575	—
1911,	5,830,995	2,764,971	3,054,344	—	115,331,800	115,448,006	91,750	—
1912,	6,235,639	3,174,331	3,044,122	—	122,365,414	121,945,038	106,160	—
1913,	6,520,436	4,090,658	2,417,973	3,300	138,707,426	138,242,848	59,686	—
1914,	6,384,222	3,831,706	2,121,162	469,340	137,637,054	137,747,982	22,540	110,020
1915,	7,595,141	3,753,012	3,081,356	734,030	138,214,907	137,693,610	31,172	—
Totals, .	79,610,421	43,532,351	34,775,350	1,206,670	1,223,156,057	1,219,622,045	1,252,209	110,020

RENOVATED BUTTER.

The following figures, from the same source as the preceding table, show the production and withdrawn tax paid of renovated butter, 1902–15: —

Renovated Butter (Pounds).

YEAR.	Production.	Withdrawn Tax paid.
1903,	54,658,790	54,223,234
1904,	54,171,183	54,204,478
1905,	60,029,421	60,171,504
1906,	53,549,900	53,361,088
1907,	62,965,613	63,078,504
1908,	50,479,489	50,411,446
1909,	47,345,361	47,402,382
1910,	47,433,575	47,378,446
1911,	39,292,591	39,352,445
1912,	46,387,398	46,413,895
1913,	38,354,762	38,285,114
1914,	32,470,030	32,513,244
1915,	39,056,180	38,924,828
Totals, .	626,194,293	625,720,608

BUTTER.

The following table shows the average quotation for the best fresh creamery butter, in a strictly wholesale way, in the Boston market for the last ten years, as compiled by the Boston Chamber of Commerce:—

MONTH.	1915. Cents.	1914. Cents.	1913. Cents.	1912. Cents.	1911. Cents.	1910. Cents.	1909. Cents.	1908. Cents.	1907. Cents.	1906. Cents.
January, . . .	32.5	32.5	33.9	36.9	28.8	33.5	30.9	29.7	30.4	25.2
February, . . .	31.1	28.8	34.9	32.5	26.9	30.5	30.0	32.1	31.7	25.2
March, . . .	30.3	27.7	36.4	32.1	24.2	32.0	29.1	30.2	30.2	25.5
April, . . .	30.1	25.1	34.5	32.7	21.7	31.5	27.9	28.4	32.2	22.2
May, . . .	28.7	25.8	28.7	30.4	22.8	29.0	26.6	24.1	31.4	19.9
June, . . .	28.5	27.5	28.2	27.9	24.2	28.2	26.4	24.5	24.3	20.2
July, . . .	27.3	27.9	27.5	28.1	26.0	28.6	27.2	23.6	25.9	21.0
August, . . .	26.0	30.1	28.2	27.1	27.2	29.6	28.2	24.5	26.0	23.8
September, . . .	27.1	30.9	31.3	29.1	27.7	29.6	31.3	25.3	29.2	25.6
October, . . .	28.5	30.9	31.2	31.0	30.4	29.4	31.7	27.5	29.9	26.9
November, . . .	29.1	32.4	31.9	32.9	32.5	30.2	31.4	29.5	27.1	27.6
December, . . .	31.2	32.7	33.8	34.0	35.0	30.0	32.9	31.0	27.5	30.7
Averages, . . .	29.2	29.4	31.7	31.2	27.3	30.2	29.5	27.5	28.8	24.48

The Chamber of Commerce figures regarding the butter business in Boston for 1914 and 1915 are as follows:—

	1915. Pounds.	1914. Pounds.
Carried over in storage,	8,963,202	8,874,204
Receipts for January,	3,353,765	3,540,476
February,	3,089,346	2,910,790
March,	3,996,912	4,171,261
April,	5,674,340	4,310,917
May,	7,797,597	7,326,985
June,	16,267,690	13,701,274
July,	14,473,792	12,684,474
August,	10,149,845	7,457,341
September,	7,882,845	5,932,317
October,	4,273,764	4,902,471
November,	2,943,272	3,208,117
December,	2,178,513	2,882,011
Total supply,	91,044,883	81,902,638
Exports for year, deduct,	308,380	16,903
Net supply,	90,736,503	81,885,735
Storage stock ¹ January 1, deduct,	9,119,000	8,963,202
Consumption for year,	81,617,503	72,922,533

¹ Stock in Boston. Terminal Refrigerating Company not included January 1, 1916.

RECEIPTS OF CONDENSED MILK.

The Chamber of Commerce figures regarding the receipts of condensed milk at Boston for 1914 and 1915 are as follows: —

	1915. Barrels.	1915. Cases.	1914. Barrels.	1914. Cases.
January,	60	24,915	299	22,030
February,	226	41,733	72	32,198
March,	201	40,436	72	38,638
April,	302	39,980	55	26,362
May,	237	27,491	15	29,889
June,	264	37,407	—	35,766
July,	940	33,428	50	47,102
August,	1,223	22,515	10	66,127
September,	470	28,692	—	35,749
October,	1,222	29,877	33	22,071
November,	167	51,748	40	34,253
December,	64	31,250	205	42,416
Totals,	5,376	409,472	815	432,601

MILK.

Milk brought into Boston by Different Railroads, December 1, 1914, to November 30, 1915, as reported by the Public Service Commissioners (Quarts).

DATE.	Boston & Albany.	Boston & Maine.	New York, New Haven & Hartford.	Total.
1914.				
December,	583,223	6,427,270	1,743,196	8,753,689
1915.				
January,	672,084	6,568,973	1,838,451	9,079,503
February,	538,597	5,877,597	1,687,272	8,103,466
March,	714,541	6,390,660	1,875,512	8,980,713
April,	819,769	6,356,709	1,830,534	9,007,012
May,	885,380	6,820,640	1,605,044	9,311,064
June,	914,337	7,106,681	1,818,819	9,839,837
July,	1,213,561	7,109,316	1,661,538	9,984,415
August,	1,046,415 $\frac{3}{4}$	6,648,682	1,697,976	9,393,073 $\frac{3}{4}$
September,	1,088,075	6,506,376	1,543,696	9,138,147
October,	696,494	6,908,152	1,389,855	8,994,501
November,	642,164	6,927,651	1,352,710	8,922,525
Totals,	9,814,640 $\frac{3}{4}$	79,648,707	20,044,603	109,507,950 $\frac{3}{4}$

Milk brought into Boston annually by Railroads for the Years ending November 30, 1906, to November 30, 1915, inclusive (Quarts).

1906,	114,233,976
1907,	109,882,190 $\frac{1}{2}$
1908,	103,831,278 $\frac{1}{2}$
1909,	108,082,936
1910,	100,606,362 $\frac{1}{2}$
1911,	90,092,772
1912,	104,019,234
1913,	107,306,849
1914,	103,638,225
1915,	109,507,950 $\frac{3}{4}$

Comparative List of Number of Cows assessed in Massachusetts, May 1, 1906, April 1, 1914, and April 1, 1915.

COUNTIES.	1906.	1914.	1915.	DECREASE.		INCREASE.	
				1906-15.	1914-15.	1906-15.	1914-15.
Barnstable,	2,448	2,243	2,249	199	-	-	6
Berkshire,	17,404	14,796	14,113	3,291	683	-	-
Bristol,	13,702	13,242	12,447	1,255	795	-	-
Dukes,	656	623	637	19	-	-	14
Essex,	17,131	13,151	12,776	4,355	375	-	-
Franklin,	12,715	10,165	10,382	2,333	-	-	217
Hampden,	12,096	8,947	9,302	2,794	-	-	355
Hampshire,	14,383	10,977	11,433	2,950	-	-	456
Middlesex,	29,508	24,053	22,892	6,616	1,161	-	-
Nantucket,	378	423	420	-	3	42	-
Norfolk,	11,200	9,397	9,235	1,965	162	-	-
Plymouth,	8,465	7,475	7,477	988	-	-	2
Suffolk,	1,186	922	837	349	85	-	-
Worcester,	40,544	30,795	30,816	9,728	-	-	21
Totals,	181,816	147,209	145,016	36,842	3,264	42	1,071

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price.

LOCATION, FARM.	Owner and Manager.	Approximate Number of Cows.	Where marketed.
Agawam, Reilly Farm,	J. J. Reilly, owner and manager.	17	Springfield.
Agawam, Colonial Farm,	H. E. Bodurtha, owner and manager.	12	Springfield.
Agawam, Elm Shade Dairy,	S. S. & E. F. Bodurtha, owners and managers.	25	Springfield.
Amherst, H. M. Thompson's farm,	H. M. Thompson, owner and manager.	25	Holyoke.
Amherst, U. G. Groff's farm,	U. G. Groff, owner and manager.	34	Amherst.
Andover, Arden Farm,	Wm. M. Wood, owner; J. M. Putnam, superintendent; Austin C. Huggins, manager of creamery.	55	Andover, Lawrence, Woburn and Boston.
Andover, Shattuck Farms,	F. Shattuck, owner and manager.	50	Lawrence.
Auburn, Wellwood Farm,	George O. Keep, owner and manager.	30	Worcester.
Barnstable, Bay Farm,	H. C. Everett, owner and manager.	-	Barnstable.
Barre, Highland View Farm,	D. A. Howe, owner; W. E. Howe, manager.	25	Worcester.
Beverly, George R. Wales' farm,	George R. Wales, owner and manager.	20	Beverly.
Bolton, Wataquodock Farm,	Paul Cunningham, owner and manager.	35	Boston and vicinity, by Alden Brothers Company.
Boston, Walker-Gordon Farm, 1106 Bolyston Street.	Walker-Gordon Laboratory Company, owner; John Nichols, manager.	100	Boston and vicinity.
Brimfield, Clarence B. Brown's farm.	Clarence B. Brown, owner and manager.	21	West Warren.
Brockton, Montello Station, Dutchland Farm.	Fred F. Field, owner; Earl D. Upton, manager.	70	Brockton.
Brookline, Louis Cabot estate,	Louis Cabot, owner; R. Barkhouse, manager.	10	Brookline.
Chilmark, West Tisbury, P. O. Oakview Farm.	J. F. Adams, owner and manager.	17	Vineyard Haven and Edgartown.
Dighton, Rock Farm,	J. W. Earle, owner; Ralph Earle, manager.	15	Fall River.
Dorchester, Codman Farm,	Watson B. Fearing, owner and manager.	125	Boston.
East Lynn,	J. D. Coombs, lessee and manager.	3	East Lynn.
East Walpole, Lewis Farm,	Geo. A. Plympton, owner,	80	Boston and vicinity, by Alden Brothers Company.
Everett, Joseph H. Cannell's farm,	Joseph H. Cannell, owner and manager.	7	Everett.
Everett, Thomas F. Leavitt's farm,	Thomas F. Leavitt, owner and manager.	8	Everett.
Fairhaven, Dana Farm,	Eliza N. and Edith Dana, owners and managers.	52	Fairhaven, Marion and Mattapoisett (in summer).
Fairhaven, Lewis F. Blossom's farm,	Lewis F. Blossom, owner and manager.	12	Fairhaven.
Framingham, Millwood Farm,	Mrs. E. F. Bowditch, owner; J. P. Bowditch, manager; F. E. Barrett, superintendent.	178	Boston and Wellesley.
Framingham, Waverney Farm,	Reginald W. Bird, owner; A. E. White, manager.	50	Boston.
Framingham, Cherry Meadow Farm.	D. M. and E. F. Belches, owners; E. F. Belches, manager.	35	Framingham.

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price — Continued.

LOCATION, FARM.	Owner and Manager.	Approximate Number of Cows.	Where marketed.
Franklin, Ray Farm, . . .	E. K. Ray estate, owner; Joseph G. Ray, trustee and manager.	100	Boston, by Elm Farm Company.
Gardner, Lakeside Farm, . . .	J. Henry Ware, owner and manager.	7	Gardner.
Gardner, Otto Wickman's farm, . . .	Otto Wickman, owner and manager.	5	Gardner.
Gloucester, Howard P. Lane's farm,	Howard P. Lane, owner and manager.	50	Gloucester.
Gloucester, H. Wallace Lane's farm,	H. Wallace Lane, owner and manager.	30	Gloucester.
Gloucester, Peter Hagstrom's farm,	Peter Hagstrom, owner and manager.	5	Gloucester.
Granby, C. W. Ball's farm, . . .	C. W. Ball, owner and manager.	29	Holyoke.
Greenfield, Wayside Farm, . . .	Frank H. Reed, owner; Mr. Purrington, manager.	25	Greenfield.
Groton, G. W. Greenhalge's farm, .	G. W. Greenhalge, owner and manager.	25	Boston and vicinity, by D. Whiting & Sons.
Hamilton, Miles River Farm, . . .	Maxwell Norman, owner and manager; C. E. Johnson, superintendent.	60	Boston.
Hardwick, Mixter Farm, . . .	Mary A. Mixter, owner; Dr. Samuel J. Mixter, manager; S. R. Parker, superintendent.	200	Boston.
Haverhill (Bradford District), J. B. Sawyer's farm.	J. B. Sawyer, owner and manager.	-	Haverhill.
Haverhill, North Broadway Milk Farm.	E. A. Emerson, owner and manager.	35	Haverhill.
Haverhill (P. O. East Haverhill), Fred Kimball's farm.	Fred Kimball, owner; Leonard Kimball, manager.	35	Haverhill.
Holyoke, Whiting Farm, . . .	W. F. Whiting, owner; John F. Richardson, manager.	20	Holyoke.
Kingston, Miss Helen Holmes' farm,	Miss Helen Holmes, owner and manager.	20	Kingston.
Lee, John Goodrich's farm, . . .	John Goodrich, owner and manager.	40	Lee.
Leominster, Boutelle Farm, . . .	E. H. Boutelle, owner and manager.	30	Leominster.
Leominster, Sholan Farm, . . .	Paul Washburn, owner; A. G. Hollquist, manager.	40	Leominster.
Longmeadow, Hillbrow Farm, . . .	H. M. Burt, owner and manager.	20	Springfield.
Lowell, Hood Farm, . . .	C. I. Hood, owner; J. E. Dodge, manager.	120	Lowell.
Ludlow, E. E. Chapman's farm, . .	Edward E. Chapman, owner and manager.	22	Ludlow and Indian Orchard.
Lunenburg, Sunnyside Farm, . . .	George M. Proctor, owner; Fred A. Miller, manager.	48	Fitchburg.
Lynnfield, N. F. McCarthy's farm,	N. F. McCarthy, owner; Eben Holmes, manager.	30	Wakefield.
Marlborough, Fairview Farm, . . .	Elmer D. Howe & Son, owners and managers.	10	Marlborough.
Medford, Mystic Valley Farm, 75 Arlington Street.	John J. Mulkerin, owner and manager.	16	Medford.
Medford, Hillside Farm, 20 Gow Street.	Alberton Harris, owner and manager.	10	Medford.
Methuen, Bragdon Farms, . . .	E. L. Bragdon, owner and manager.	30	Lawrence.

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price — Continued.

LOCATION, FARM.	Owner and Manager.	Approximate Number of Cows.	Where marketed.
Methuen, Cox Farms, . . .	Louis Cox, owner; L. Coburn, manager.	31	Lawrence.
Methuen, Howe Farm, . . .	E. D. Taylor, owner and manager.	50	Lawrence.
Methuen, Spring Valley Farms, .	Fred Miller, owner and manager.	50	Lawrence.
Methuen, S. W. Williams' farm, .	S. W. Williams, owner and manager.	30	Lawrence.
Millis, Lowland Farm, . . .	E. F. Richardson, owner and manager.	25	Boston.
Milton, Highland Farm, . . .	Patriquin & Newton, lessees; George Patriquin, manager.	65	Milton.
Needham, K. E. Webb's farm, . .	Kenneth E. Webb, owner and manager.	31	Needham.
Newton (P. O. Waban), W. B. McMullin's farm.	William B. McMullin, owner and manager.	17	Needham and Newton.
Newtonville, Willow Farm, 120 Farwell Street.	D. F. Smith, owner and manager.	48	Newton, Brookline and Boston.
Norfolk, Meadowside Farm, . . .	T. D. Cook & Co., owners and managers.	35	Boston.
North Amherst, The Elms, . . .	R. D. Dickinson, owner and manager.	30	Amherst.
North Attleborough, Halliday Farm,	Fred F. Halliday, owner; Robert C. Halliday, manager.	9	Pawtucket, R. I.
North Falmouth, Manuel G. White's farm.	Manuel G. White, owner and manager.	6	North Falmouth.
North Grafton, Bonnybrook Farm,	Everett N. Kearney, owner and manager.	60	Worcester.
North Tewksbury, Mountjoy, . .	Miss Florence Nesmith, owner; C. E. Lougee, manager.	50	North Tewksbury.
Northampton, W. J. LaFleur's farm,	W. J. LaFleur, owner and manager.	11	Northampton.
Oak Bluffs, Woodsedge Farm, . .	F. W. Chase, owner and manager.	20	Oak Bluffs.
Paxton, E. G. Richards' farm, . .	E. G. Richards, owner and manager.	40	Worcester, by C. Brigham Company.
Paxton, Echo Farm, . . .	W. J. Woods, owner; Joseph Graham, manager.	40	Worcester, by C. Brigham Company.
Pepperell, George Shattuck's farm,	George Shattuck, owner and manager.	75	Boston and vicinity, by D. Whiting & Sons.
Pittsfield, Abby Lodge, . . .	A. W. Cooley, owner; Mr. Carlson, manager.	35	Boston.
Pittsfield, Mr. Bardwell's farm, .	Mr. Bardwell, owner and manager.	14	Pittsfield.
Pittsfield, E. W. Page's farm, . .	E. W. Page, owner and manager.	8	Pittsfield.
Revere, Mrs. M. L. Mahoney's farm,	Mrs. M. L. Mahoney, owner; J. J. Mahoney, manager.	25	Malden.
Saugus, Oaklandvale Farm, . . .	Frank P. Bennett, owner and manager.	112	Lynn.
South Lincoln, South Lincoln Dairy Company.	South Lincoln Dairy Company, owner; W. A. Blodgett, manager.	220	Boston, Cambridge and Brookline.
South Natick, Carver Hill Farm, .	Carver Hill Farms, Inc., Austin Potter.	75	Wellesley, Boston, Natick, Needham and Dover.
Southville, Waumesit Farm, . . .	R. F. Parker, owner and manager.	20	Boston and vicinity, by C. Brigham Company.

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price — Concluded.

LOCATION, FARM.	Owner and Manager.	Approximate Number of Cows.	Where marketed.
Sherborn, H. N. Brown's farm,	H. N. Brown, owner and manager.	50	Boston.
Sherborn, Dexter Farm,	George T. Dexter, owner and manager.	23	Boston and vicinity, by Alden Brothers Company.
Sherborn, J. M. Merriam's farm, . . .	J. M. Merriam, owner and manager.	40	Boston.
Sterling, Twin Oaks Farm (P. O. Pratt's Junction).	James F. Pratt, owner and manager.	75	Milk, Boston; cream, Worcester.
Stoughton, Tobey Farm,	E. B. Hutchins, owner and manager.	15	Brockton.
Taunton, George Soper's farm,	George Soper, owner and manager.	30	Taunton.
Waltham, Pleasantdale Farm,	C. U. Hubbard, owner and manager.	35	Weston.
Warren, Maple Farm,	J. R. Blair, owner and manager.	27	Boston, by C. Brigham Company.
Wayland, Perkins' estate,	S. N. Sanders, manager, .	12	Waltham.
Westfield, Woronoak Farm,	Edgar L. Gillett, owner; N. J. Weidhaas, manager.	12	Westfield.
Weston, Charles Merriam's farm, . . .	Charles Merriam, owner and manager.	51	Waltham.
Westwood, Fox Hill Farm,	Joshua Crane, owner; L. W. Jackman, manager.	100	Boston.
West Newton and Barre, Wauwinet Farm.	George H. Ellis, owner; P. F. Staples and R. M. Handy, managers.	400	Boston, Brookline and Newton.
Woburn, John Day's farm,	John Day, owner and manager.	18	Winchester.
Worcester, Pleasant View Farm, . . .	Warren C. Jewett, owner and manager.	40	Worcester.
Worcester, Lewis J. Kendall's farm,	Lewis J. Kendall, owner and manager.	40	Worcester.
Worcester, Intervale Farm,	J. Lewis Ellsworth, owner and manager.	14	Worcester.
Worcester, Village Farm,	H. B. Prentice, owner and manager.	30	Worcester.

NOTE. — Deerfoot Farms Dairy, office at 172 Tremont Street, wholesale distributing house at 132 Central Street, Boston, milk received from milk depots at Southborough and Northborough, sells milk of superior quality and cleanliness at a price above that of ordinary market milk, and handles the product of 129 dairy farms, averaging about 10 cows each, located in Southborough, Northborough, Westborough and Holliston. Most of these farms, therefore, at some time during the year come properly within the requirements of this list.

List of Massachusetts Dairy Farms making Certified Milk.

NAME, LOCATION.	Owner and Manager.	Approximate Number of Cows.	Certified by —	Where marketed.
Cedar Hill Farm, Waltham,	Miss Cornelia Warren, owner; Charles Cahill, manager.	215	Cambridge Medical Commission.	Waltham, Cambridge, Boston.
Cedar Crest Farm, Waltham.	John C. Runkle, owner; Louis W. Dean, manager.	90	Cambridge Medical Commission.	North Shore, Cambridge, Boston.
Cherry Hill Farm, Beverly,	H. P. Hood & Sons, owners; O. H. Perrin, manager.	80	Medical Milk Commission of Boston.	Boston, North Shore, Lawrence.
A. D. Davis' farm, Sheffield,	A. D. Davis, owner and manager.	60	—	Some in Great Barrington; balance outside of State.
Indian Bridge Farm, Weyland.	Edmund H. Sears, owner; Walter Jauncey, Jr., manager.	16	Cambridge Medical Milk Commission.	Waltham.
Ledyard Farm, Andover,	J. A. & W. H. Gould, owners and managers.	50	Malden Medical Commission.	Malden.
Massachusetts Agricultural College Farm, Amherst.	Massachusetts Agricultural College, J. A. Foord.	65	Medical Milk Commission of Boston.	Boston.
Oaks Farm, Cohasset,	C. W. Barron, owner; W. E. Stilwell, manager.	50	Medical Milk Commission of Cohasset.	Cohasset.
Oliver Prescott's farm, Dartmouth (P. O. North Dartmouth).	Oliver Prescott, owner; Harry W. Martin, manager.	20	New Bedford Medical Commission.	New Bedford.
Prospect Hill Farm, Essex,	J. A. & W. H. Gould, owners and managers.	175	Medical Milk Commission of Boston.	Boston, Brookline, Jamaica Plain, North Shore.
Seven Gates Farm; North Tisbury.	W. L. Webb, owner; O. L. Curtis, manager.	20-25	Medical Milk Commission of West Tisbury, Inc.	Martha's Vineyard.
Walter A. White's farm, Acushnet.	Walter A. White, owner and manager.	30	New Bedford Medical Commission.	New Bedford.

LIST OF LOCAL MILK INSPECTORS.

MILK INSPECTORS FOR CITIES AND TOWNS.

Barnstable County.

Barnstable,	George T. Mecarta.
Provincetown,	John Dennis.
Sandwich,	J. E. Holway.

Berkshire County.

Adams,	Dr. A. G. Potter.
Clarksburg,	Cassius Quackenbush, North Adams.
Dalton,	H. Ward Ford.
Florida,	Cassius Quackenbush, North Adams.
Great Barrington,	Dewitt Smith.

Hinsdale,	Alfred N. Warren.
Housatonic,	J. J. Barr.
Lenox,	Thomas Briant.
North Adams,	Cassius Quackenbush.
Pittsfield,	Dr. Bernard M. Collins.
Williamstown,	G. S. Jordan, V.S.

Bristol County.

Attleboro,	Caleb E. Parmenter.
Berkley,	Alan A. Haskell.
Fairhaven,	Bertha F. Carl Frommell, M.D.
Fall River,	Henry Boisseau.
New Bedford,	Herbert Hamilton, D.V.S.
North Attleborough,	Hugh Gaw, D.V.S.
Norton,	Edmund H. Elliot, Chartley.
Taunton,	Lewis I. Tucker.
Westport,	George A. Tripp.

Dukes County.

Gosnold,	John T. Cornell, Cuttyhunk.
Tisbury,	Chas. S. Norton.

Essex County.

Amesbury,	James L. Stewart.
Andover,	Franklin H. Stacey.
Beverly,	Henry E. Dodge, 2d.
Danvers,	Wm. Hugo Nappe.
Gloucester,	Dr. G. E. Watson.
Hamilton,	Chas. S. Moore, Danvers.
Haverhill,	Dr. Homer L. Conner.
Ipswich,	George W. Smith.
Lawrence,	Dr. J. H. Tobin.
Lynn,	George A. Flanagan.
Lynnfield,	Dr. F. W. Freeman, Lynnfield Center.
Marblehead,	A. M. Stone.
Nahant,	Robert L. Cochrane.
Newburyport,	R. D. Hamilton.
Peabody,	Edward F. McHugh.
Salem,	John J. McGrath.
Salisbury,	John F. Pike.
Topsfield,	Charles S. Moore, Danvers.

Franklin County.

Gill,	George L. Marshall, Bernardston, R. F. D.
Montague,	Frank Dubie, Turners Falls.
Northfield,	E. C. Field, Northfield Farms.
Shelburne,	G. J. Tower, Shelburne Falls.
Warwick,	O. W. Cole.

Hampden County.

Brimfield,	George W. Sherman.
Chicopee,	C. J. O'Brien.
East Longmeadow,	Henry S. Ashley.
Holyoke,	Daniel P. Hartnett.
Ludlow,	A. L. Bennett, D.V.S.
Monson,	Dr. E. W. Capen.
Palmer,	M. H. Davitt, V.S.
Springfield,	Stephen C. Downs.
West Springfield,	Norman T. Smith.
Westfield,	William H. Porter.

Hampshire County.

Amherst,	Dr. N. C. Haskell.
Easthampton,	George L. McEvoy.
Hadley,	Henry S. Shipman.
Northampton,	George R. Turner.
South Hadley,	George F. Boudreau.
Ware,	Fred E. Marsh.

Middlesex County.

Arlington,	L. L. Pierce, D.V.S.
Ashland,	H. H. Piper.
Ayer,	Edward E. Sanger.
Bedford,	Dr. I. Pfeiffer, Jr.
Belmont,	Thomas F. Harris.
Billerica,	A. H. Jones.
Cambridge,	William A. Noonan, M.D.
Carlisle,	Benjamin F. Blaisdell.
Concord,	Joseph Dee, Jr.
Everett,	E. Clarence Colby.
Framingham,	R. N. Hoyt, Wellesley.
Groton,	Herbert Rockwood.
Hudson,	William H. Clark.
Lexington,	L. L. Pierce, D.V.S., Arlington.

Lowell,	Melvin F. Master.
Malden,	J. A. Sanford.
Marlboro,	John J. Cassidy.
Medford,	Winslow Joyce.
Melrose,	R. N. Hoyt, Wellesley.
Natick,	Thomas A. Doyle, D.V.M.
Newton,	Arthur Hudson.
North Reading,	A. Herbert Batchelder.
Pepperell,	Dr. Fred A. Davis.
Somerville,	Herbert E. Bowman.
Stoneham,	Roy Doucett.
Wakefield,	Carl M. Smith, Reading.
Waltham,	Arthur L. Stone, M.D.
Watertown,	R. N. Hoyt, Wellesley.
Weston,	R. N. Hoyt, Wellesley.
Winchester,	Maurice Dinneen.
Woburn,	Edward P. Kelly, M.D.

Norfolk County.

Avon,	R. A. Elliott, M.D.
Braintree,	F. H. Gile.
Brookline,	W. E. Ward.
Canton,	R. N. Hoyt, Wellesley.
Dedham,	Edmand Knobel.
Franklin,	J. Newton Blanchard.
Medway,	N. P. Quint, M.D., West Medway.
Milton,	Wallace C. Tucker, Mattapan.
Needham,	R. N. Hoyt, Wellesley.
Plainville,	John C. Eiden.
Quincy,	Daniel Scouler, Jr.
Stoughton,	William E. Ferrin.
Wellesley,	R. N. Hoyt.
Weymouth,	George B. Bayley, South Weymouth.

Plymouth County.

Bridgewater,	Joseph Brennan.
Brockton,	George E. Bolling.
Hingham,	C. A. Dorr, M.D., South Hingham.
Hull,	Carroll A. Cleverly.
Marion,	Austin L. Pierce.
Middleborough,	F. F. Conway, D.V.S.
Scituate,	George T. Otis.
Wareham,	John J. Beaton.
Whitman,	E. A. Dyer.

Suffolk County.

Boston,	Professor James O. Jordan.
Chelsea,	Dr. W. S. Walkley.
Revere,	Joseph E. Lamb, M.D.
Winthrop,	S. A. Mowry.

Worcester County.

Ashburnham,	James F. Hare.
Athol,	John H. Meany, V.S.
Clinton,	Gilman L. Chase.
Fitchburg,	John F. Bresnahan.
Gardner,	Harry O. Knight.
Lancaster,	George E. Howe.
Leominster,	William H. Dodge.
Lunenburg,	C. E. Woods.
Millbury,	Fred A. Walkins.
Northborough,	E. C. Valentine.
North Brookfield,	Windsor R. Smith, M.D.V.
North Dana,	Francis B. Crawford.
Southborough,	John W. Robinson, D.V.M.
Southbridge,	Albert R. Brown.
Warren,	Joseph St. George.
West Boylston,	A. M. Tyler, M.D., Oakdale.
West Brookfield,	John W. Houghton.
Westborough,	Charles H. Reed.
Winchendon,	Dr. G. W. Stanbridge.
Worcester,	Gustaf L. Berg.

Each of the following towns has reported that milk inspection is done by its local board of health: —

Berkshire County: —
 Lanesborough.
 Stockbridge.

Middlesex County: —
 Hopkinton.
 Sherborn.

Norfolk County: —
 Foxborough.
 Sharon.

Worcester County: —
 Hardwick.
 Rutland.
 Sturbridge.

CREAMERIES, MILK DEPOTS, ETC.

Co-operative Creameries.

NUMBER AND LOCATION.	Name.	Superintendent or Manager.
1. Ashfield,	Ashfield Creamery,	William Hunter, manager.
2. Belchertown,	Belchertown Creamery,	M. G. Ward, president.
3. Cummington,	Cummington Creamery,	D. C. Morey, superintendent.
4. Easthampton,	Easthampton Creamery,	E. B. Clapp, treasurer.
5. Monterey,	Berkshire Hills Creamery,	F. A. Campbell, treasurer.
6. Northfield,	Northfield Creamery,	C. C. Stearns, treasurer.
7. Shelburne,	Shelburne Creamery,	Ira Barnard, manager.

Proprietary Creameries.

NUMBER AND LOCATION.	Name.	Owner or Manager.
1. Amherst,	Amherst Creamery Company,	R. W. Pease, manager.
2. Amherst,	Fort River Creamery,	Clarence M. Wood, manager (estate of E. A. King, owner).
3. Brimfield,	Crystal Brook Creamery,	F. N. Lawrence, proprietor.
4. Great Barrington,	Edgewood Creamery,	C. W. Freehan, manager.
5. Heath,	Cold Spring Creamery,	I. W. Stetson & Son.
6. Hinsdale,	Hinsdale Creamery,	Walter C. Solomon, proprietor.

Educational.

LOCATION.	Name.	Manager.
Amherst,	Dairy Industry Course, Massachusetts Agricultural College.	W. P. B. Lockwood, professor in charge.

Principal Milk-distributing Depots.

NAME.	Location.	Manager.
Acton Farms Milk Company, . .	Somerville, Windsor Street, . .	Arthur B. Parker, treasurer.
Alden Brothers Company, . .	Boston office, 1171 Tremont Street; depot, 24-28 Duncan Street.	Charles L. Alden, president; John Alden, treasurer.
Anderson Brothers,	Worcester, Eckman Street, . .	Anderson Brothers.
Bonnie Brook Farms,	South Sudbury,	Norman E. Borden.
Boston Ice Cream Company, . .	Roxbury, 40 King Street, . .	Harry M. Hardwick, president and treasurer.

Principal Milk-distributing Depots — Concluded.

NAME.	Location.	Manager.
Boston Jersey Creamery,	Boston, 9 Fulton Street,	Theo. P. Grant, president and manager.
Brigham, C., Company, .	Cambridge, 158 Massachusetts Avenue.	John K. Whiting.
Brigham, C., Company, .	Worcester, 9 Howard Street, .	C. Brigham Company.
Bristol Creamery Company, .	Boston, 132 Central Street, .	William L. Johnson.
Columbia Creamery, .	Springfield, 117 Lyman Street, .	H. A. Mosely.
Deerfoot Farms Dairy, .	Boston, 132 Central Street; depots at Northborough and Southborough.	S. H. Howes.
Elm Farm Milk Company, .	Boston, Wales Place,	James H. Knapp, treasurer.
Farmers Milk Company, .	Charlestown, 484 Rutherford Avenue.	Oscar R. Lang, treasurer.
Franklin Creamery Company,	Boston, 147 Harrison Avenue, .	Tait Brothers.
Hampden Creamery Company,	Everett, Orient Avenue, . . .	Frank H. Adams, treasurer.
Hood, H. P., & Sons, . . .	Boston, 494 Rutherford Avenue; branches, 24 Anson Street, Forest Hills; 886 Broadway, Chelsea; 298 Dorchester Avenue, South Boston. Brookline, 136 Westbourne Terrace. Lawrence, 629 Common Street. Lynn, 193 Alley Street. Malden, 425 Main Street. Medford, 452 High Street. Watertown, 479 Pleasant Street. Fitchburg, 26 Cushing Street, .	Charles H. Hood.
Learned, G. S. (Fitchburg Creamery).		G. S. Learned.
Llanwhitkell Farms Creamery,	Boston, 23 Ferry Street, . . .	Nelson P. Cook, manager.
Lyndonville Creamery Association.	Watertown, 86 Elm Street, . .	Willis C. Conner, manager.
Nash, Charles A.,	Springfield, 120 Oakland Street, .	Charles A. Nash, manager.
Newhall, J. A.,	Newburyport, 32 Monroe Street, .	J. A. Newhall.
Perry, A. D.,	Worcester, Kansas Street, . . .	A. D. Perry.
Plymouth Creamery Company,	Boston, 268-270 State Street, . .	John W. Davies.
Prentice, H. H., & Co. (Berkshire Creamery).	Pittsfield, Crane Avenue, . . .	H. H. Prentice.
Rockingham Milk Company, .	Charlestown, Boston office, Hancock Square; depot 330 Rutherford Avenue.	Rolan H. Toothaker, president.
Somers Creamery Company, .	Springfield, 178 Dwight Street, .	W. M. Cushman.
Springfield Creamery, . . .	Springfield, Main Street, . . .	F. B. Allen, proprietor.
Tait Brothers,	Springfield, 37 Vinton Street, . .	Tait Brothers, proprietors.
Turgeon, Frank H.,	Boston, 213 Camden Street, . . .	Frank H. Turgeon.
Turner Center Dairying Association.	Boston office, 63, 67 and 69 Endicott Street.	Irven L. Smith, manager.
Wachusett Creamery, . . .	Worcester, 6 Lincoln Street, . .	E. H. Thayer & Co., proprietors.
Whiting, D., & Sons, . . .	Boston, 570 Rutherford Avenue, .	George Whiting.

Modified Milk Laboratory.

H. P. Hood & Sons,	Boston, 494 Rutherford Avenue, .	C. H. Hood.
Walker-Gordon Laboratory, .	Boston, 1106 Boylston Street, . .	George W. Franklin.

Receiving Depot for Milk, for Shipments to New Rochelle.

NAME.	Location.	Manager.
Willow Brook Dairy Company,	Sheffield,	Frank Percy.
Willow Brook Dairy Company,	North Egremont,	George Wyble.

ENCOURAGEMENT OF PRACTICAL DAIRYING EXPENSES.

Agents, compensation,	\$391 00
Agents, expenses,	723 63
Judge's expenses,	5 51
Engraved certificates (two years),	150 00
Engrossing certificates (two years),	151 73
Printing,	76 41
Supplies,	26 63
Total,	\$1,524 91
Cash prizes,	4,261 00
Total expenditures,	\$5,785 91

REGULAR BUREAU EXPENSES.

The following is a classified statement of the expenses for the year ending November 30, 1915: —

Bureau, compensation,	\$295 00
Bureau, traveling expenses,	335 77
Agents, compensation,	2,565 00
Agents, expenses,	2,385 98
Samples purchased,	179 71
General agent, traveling expenses,	325 95
Analysts, analyses,	336 50
Analysts, tests,	62 50
Analysts, court attendance,	156 82
Printing,	412 33
Photography,	49 89
Postage,	300 00
Telephone,	19 71
Supplies,	548 13
Total,	\$7,973 29

P. M. HARWOOD,

General Agent.

Accepted and adopted as the report of the Dairy Bureau.

CHARLES M. GARDNER.
GEORGE W. TRULL.
O. E. BRADWAY.

TWENTY-SIXTH ANNUAL REPORT

OF THE

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 13, 1917.



BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
32 DERNE STREET.

1917.

TWENTY-SIXTH ANNUAL REPORT

OF THE

Mass:
- DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 13, 1917.



BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
32 DERNE STREET.

1917.

cm

R

STATE OF NEW YORK

IN SENATE,

1911

REPORT

PUBLICATION OF THIS DOCUMENT
APPROVED BY THE
SUPERVISOR OF ADMINISTRATION.

STATE OF NEW YORK

1911

REPORT

1911

614.32M3

D13n

1916

B

DAIRY BUREAU—1916.

OMER E. BRADWAY, MONSON, *Chairman.*

GEORGE W. TRULL, TEWKSBURY, P. O. LOWELL, R. F. D.

GEORGE E. TAYLOR, JR., SHELBURNE.

Secretary.

WILFRID WHEELER, *Executive Officer and Secretary of the State
Board of Agriculture.*

General Agent.

P. M. HARWOOD,

ADDRESS, ROOM 136, STATE HOUSE, BOSTON.

The Commonwealth of Massachusetts.

REPORT OF THE DAIRY BUREAU.

The work of the Bureau for 1916 has been notable on account of the interest, manifested by the large number of entries, in the clean milk contest; and the increased call for demonstrations, lectures, pamphlets, etc., relating to the food value of milk; also by the small number of violations of oleomargarine and renovated butter laws. The Legislature of 1916 was asked by the State Board of Agriculture to appropriate \$50,000 annually for three years to encourage and improve the dairy and live-stock interests of the State. The committee on agriculture reported the resolve, but reduced the amount to \$15,000 annually. The ways and means committee, however, still further reduced the amount appropriated to \$5,000 per year, which left the matter virtually to be a call for continuation of the special work already begun by the Dairy Bureau of the Board and continued during the three previous years. In pursuance of this resolve \$2,700 was offered in prizes for a clean milk contest. A new plan of awarding prizes was adopted because the time had come when the difference in results was so slight in individual cases that it could be determined only with the use of a high-power magnifying glass. Heretofore the prizes had been awarded in one, two, three order. This year the prizes were awarded in three classes, namely, superior merit, merit and honorable mention. There were three divisions of contestants, namely, (a) owners, (b) juniors, and (c) employees. The total number of applicants was 653, of which 578 competed in the contest. Out of this number 132 won superior merit; 101 merit; and 81 honorable mention; a total of 314, or more than one-half the total contestants. It should be remembered that the object of this contest is to educate and encourage clean milking, a fundamental necessity in securing a clean product. In addition to the foregoing prizes \$250 was offered co-operative creameries for excellence in condition of cream as delivered.

FOOD VALUE OF MILK.

In 1910 the secretary of the State Board of Agriculture, at the request of the Dairy Bureau, asked Professor Washburn of Vermont to deliver a lecture on "Food Value of Milk" at its Public Winter Meeting. This lecture was later repeated in Worcester at the expense of the Bureau. Shortly afterwards the general agent wrote "Circular No. 1," of which several editions were issued and rapidly exhausted, and the subject "Food Value of Milk" was added to his list of lectures. In 1914 and 1915 several editions of "Leaflet A" were issued. In 1916 an illustrated folder was published and nearly 100,000 copies have already been distributed. We believe this work has been productive of good results.

LECTURES.

The general agent has delivered 19 lectures upon dairy subjects during the year, and has attended several dairy conferences at Washington and represented the secretary at the organization of the National Association of Commissioners and Secretaries of Agriculture.

BACTERIOLOGICAL LABORATORY.

The Bureau has equipped a bacteriological laboratory in Greenfield which will be operated for the present by the Franklin County Farm Bureau. The establishment of this laboratory is an experiment, and from the present outlook it appears that it will be found to be of great benefit to the farmers in its locality.

NATIONAL DAIRY SHOW.

The National Dairy Show was held at the Eastern States Exposition grounds, Springfield, and was perhaps the most notable event of the year. The Dairy Bureau contributed and Mr. A. W. Lombard had general charge of Massachusetts building exhibits, which were highly commended by visitors. Mr. Lombard presided at the meetings of the International Association of Dairy and Milk Inspectors and was re-elected first vice-

president for the ensuing year. The show as a whole was splendid and the effect upon the dairy industry of the State should be the awakening of new enthusiasm and endeavor.

DAIRY SITUATION.

It is with pleasure that we note an increase of 2,618 cows taxed in 1916 over 1915, and also the increased price which the dairyman is now receiving for his milk. Best of all is the fact that apparently the time has come when an increase in the price of milk is not so seriously objected to as formerly. To be sure, some consumers are using less milk as the price advances, but that milk is relatively cheap as compared with other forms of animal food is coming to be realized. Milk receipts in Boston indicate increased consumption. (See page 14.) The year now ending discloses the situation of a comparative milk shortage acknowledged even by the milk contractors themselves. This is largely due to the enormous demand for evaporated and powdered milk abroad. Milk in Massachusetts towns is now selling at 8 and 9 cents per quart and in some instances (as on the Cape) at 12 to 14 cents. The price of ordinary market milk in Boston is 10 cents per quart, fancy grades ranging from 12 cents upward, and in most instances at an advance over former prices.

In the early part of the year the Interstate Commerce Commission held an investigation of the railroad rates pertaining to the milk supply of several large centers in this country. The first of these meetings was held in Boston. The result of this investigation is that the former unsatisfactory condition has been straightened out and fair and just rates established. These rates increase with each 20-mile circuit distance from Boston, applicable only to interstate traffic. The abolishment of the so-called leased-car system was accomplished. Nearly every dairy interest in the State, and in fact in New England, was represented at this hearing which was thoroughly exhaustive in its investigation. The Board of Agriculture was efficiently represented by the Attorney-General of the Commonwealth. The general agent attended the hearings and offered several witnesses, and the testimony of the one accepted, Mr. Clifton E. Walcott of Barre, proved of great value. We congratulate all

concerned on the outcome of this investigation. We are pleased to note further that there are now on foot definite and well-considered plans for solid co-operation of milk producers in both small and large units in this State. Such co-operation, if effected and carried out in proper spirit, can but be of material and lasting benefit to the milk producers. More and more it is settling into the minds of our people that the solution of the milk producer's troubles is not so much a matter of legislation as it is a matter of co-operation and business efficiency.

CONDENSED MILK.

The Boston Chamber of Commerce reports that the amount of condensed milk handled in Boston in 1916 was 2,945 barrels and 762,446 cases. This is a decrease of 1,616 barrels from the number of barrels handled in 1915 and an increase of 739,317 cases. (See table on page 13.)

OLEOMARGARINE.

The number of licenses in force in the State in 1915 was 1,089, and in November, 1916, was 916, including two manufacturers' licenses. In Boston the number of packages handled as reported by the Chamber of Commerce in 1915 was 69,041; the number in 1916 was 40,998, a decrease of 28,053 cases. (For additional statistics see table on page 11.)

RENOVATED BUTTER.

In 1915 there were 39,056,180 pounds of renovated butter produced in the United States, while in 1916 there were 34,514,527 pounds, showing a decrease of 4,541,653 pounds. (See table on page 12.)

BUTTER.

The Chamber of Commerce reports the average wholesale price of butter in Boston market for 1916 as 33.7 cents, an increase of 4.5 cents per pound over that of 1915. The consumption of butter, Boston output, during 1915 was 81,617,503 pounds, while in 1916 it was 79,279,456, showing a decrease of 2,338,047 pounds, due undoubtedly to the increased price. It is unusual to note an apparent decrease in consumption of

butter, oleomargarine and renovated butter all in one year. So far as butter is concerned this should never be the case in a community where the population is increasing. Butter is a relatively cheap, heat and energy producing food even at present prices.

LOCAL MILK INSPECTORS.

The number of local milk inspectors in this State is increasing each year, there now being one hundred more than in 1910. Most of these men are doing excellent work in their respective localities. They are intelligent, enthusiastic and ready to co-operate and this Bureau has found them of great assistance in promoting any work tending to improve the condition of the milk supply. They have a strong State association.

PERSONNEL OF THE BUREAU.

The personnel of the Bureau is as follows: Omer E. Bradway of Monson, chairman, George W. Trull of Tewksbury and George E. Taylor, Jr., of Shelburne. The executive force, agents, analysts, etc., are as follows: executive officer and secretary, Wilfrid Wheeler; general agent, P. M. Harwood; analysts, B. F. Davenport, M.D., Boston, and Gilbert L. Clark, Emerson Laboratory, Springfield; agent, A. W. Lombard; and five others have been employed temporarily.

Mr. Charles M. Gardner of Westfield, who served as chairman of the Bureau for several years, retired at the beginning of 1916. The State owes a debt of gratitude to Mr. Gardner for his efficient service during the troublesome years of dairy agitation.

SUMMARY OF POLICE WORK.

Total number of inspections,	5,661 ¹
Number of inspections where no samples were taken,	4,759
Number of samples of butter, oleomargarine and renovated butter, all purchased,	752
Number of samples of milk and cream,	80
Cases entered in court,	19
Convictions,	19
Addresses by general agent,	19

¹ There were 70 extra samples taken during the year, therefore this number is 70 less than the sum of the next three items.

Cases prosecuted during the twelve months ending November 30, 1916, by months and courts, with law violated, and results, are as follows: —

COURT.	Month.	Num-ber.	Law violated.	Con-victed.	Nol-prossed.
Dedham, Northern Norfolk Dis-trict.	December, .	1	1 milk,	1	—
East Brookfield, Western Worces-ter District.	January, .	1	1 milk,	1	—
Lowell Police,	January, .	6	6 renovated butter,	6	—
Worcester, Central Worcester District.	February, .	2	2 milk,	2	—
Attleboro, Fourth Bristol Dis-trict.	February, .	2	2 renovated butter,	2	—
Barre, Trial Justice,	February, .	1	1 milk,	1	—
Fitchburg Police,	March, .	6	4 oleomargarine, 2 renovated butter.	6	—
Total, . . . . .	. . . . .	19		19	—

NOTE. — The Bureau is indebted to the milk inspectors of Massachusetts for assistance which has resulted in court cases.

The charges in the several cases entered in court for the year ending November 30, 1916, have been as follows: —

Furnishing oleomargarine in restaurants, etc., without notice to guests,	2
Selling renovated butter in unmarked packages,	10
Selling adulterated milk,	5
Selling oleomargarine in unmarked packages,	2

19

The following table shows the inspections without samples, and the number of samples taken during the past fourteen years: —

YEARS.	Inspections without Samples.	Samples.
1903-15 (inclusive),	73,142	21,446
1916,	4,759	902
Total for fourteen years,	77,901	22,348
Average,	5,564	1,596

OLEOMARGARINE.

The following figures, taken from the annual report of the United States Commissioner of Internal Revenue for 1916, show the production, withdrawn tax paid, withdrawn for export, and withdrawn for use of the United States, of the two classes of oleomargarine, as defined by act of May 9, 1902, covering the period of fourteen years since it went into effect on July 1, 1902: —

Oleomargarine (Pounds).

YEARS.	PRODUCT TAXED AT RATE OF 10 CENTS PER POUND.				PRODUCT TAXED AT RATE OF ¼ CENT PER POUND.			
	Pro- duced.	With- drawn Tax paid.	With- drawn for Export.	With- drawn Free of Tax for Use of the United States.	Pro- duced.	With- drawn Tax paid.	With- drawn for Export.	With- drawn Free of Tax for Use of the United States.
1903, . .	5,710,407	2,312,493	3,334,969	—	67,573,689	66,785,796	151,693	—
1904, . .	3,785,670	1,297,068	2,504,940	—	46,413,972	46,397,984	123,425	—
1905, . .	5,560,304	3,121,640	2,405,763	—	46,427,032	46,223,691	137,670	—
1906, . .	4,888,986	2,503,095	2,422,320	—	50,545,914	50,536,466	78,750	—
1907, . .	7,758,529	5,009,094	2,695,276	—	63,608,246	63,303,016	129,350	—
1908, . .	7,452,800	4,982,029	2,522,188	—	74,072,800	73,916,869	109,480	—
1909, . .	5,710,301	3,275,968	2,403,742	—	86,572,514	86,221,310	112,958	—
1910, . .	6,176,991	3,416,286	2,767,195	—	135,685,289	135,159,429	97,575	—
1911, . .	5,830,995	2,764,971	3,054,344	—	115,331,800	115,448,006	91,750	—
1912, . .	6,235,639	3,174,331	3,044,122	—	122,365,414	121,945,038	106,160	—
1913, . .	6,520,436	4,090,658	2,417,973	3,300	138,707,426	138,242,848	59,686	—
1914, . .	6,384,222	3,831,706	2,121,162	469,340	137,637,054	137,747,982	22,540	110,020
1915, . .	7,595,141	3,753,012	3,081,356	734,030	138,214,907	137,693,610	31,172	—
1916, . .	6,748,940	3,403,287	2,561,613	746,281	145,760,973	145,443,578	26,076	2,250
Totals, .	86,359,361	46,935,638	37,336,963	1,952,951	1,368,917,030	1,365,065,623	1,278,285	112,270

RENOVATED BUTTER.

The following figures, from the same source as the preceding table, show the production and withdrawn tax paid of renovated butter, 1902-16: —

Renovated Butter (Pounds).

YEARS.	Production.	Withdrawn Tax paid.
1903,	54,658,790	54,223,234
1904,	54,171,183	54,204,478
1905,	60,029,421	60,171,504
1906,	53,549,900	53,361,088
1907,	62,965,613	63,078,504
1908,	50,479,489	50,411,446
1909,	47,345,361	47,402,382
1910,	47,433,575	47,378,446
1911,	39,292,591	39,352,445
1912,	46,387,398	46,413,895
1913,	38,354,762	38,285,114
1914,	32,470,030	32,513,244
1915,	39,056,180	38,924,828
1916,	34,514,527	34,572,335
Totals,	660,708,820	660,292,943

BUTTER.

The following table shows the average quotation for the best fresh creamery butter, in a strictly wholesale way, in the Boston market for the last ten years, as compiled by the Boston Chamber of Commerce:—

MONTHS.	1916. Cents.	1915. Cents.	1914. Cents.	1913. Cents.	1912. Cents.	1911. Cents.	1910. Cents.	1909. Cents.	1908. Cents.	1907. Cents.
January, . . .	32.0	32.5	32.5	33.9	36.9	28.8	33.5	30.9	29.7	30.4
February, . . .	32.0	31.1	28.8	34.9	32.5	26.9	30.5	30.0	32.1	31.7
March, . . .	34.5	30.3	27.7	36.4	32.1	24.2	32.0	29.1	30.2	30.2
April, . . .	35.9	30.1	25.1	34.5	32.7	21.7	31.5	27.9	28.4	32.2
May, . . .	35.4	28.7	25.8	28.7	30.4	22.8	29.0	26.6	24.1	31.4
June, . . .	29.7	28.5	27.5	28.2	27.9	24.2	28.2	26.4	24.5	24.3
July, . . .	29.0	27.3	27.9	27.5	28.1	26.0	28.6	27.2	23.6	25.9
August, . . .	31.2	26.0	30.1	28.2	27.1	27.2	29.6	28.2	24.5	26.0
September, . . .	33.6	27.1	30.9	31.3	29.1	27.7	29.6	31.3	25.3	29.2
October, . . .	35.1	28.5	30.9	31.2	31.0	30.4	29.4	31.7	27.5	29.9
November, . . .	37.6	29.1	32.4	31.9	32.9	32.5	30.2	31.4	29.5	27.1
December, . . .	38.5	31.2	32.7	33.8	34.0	35.0	30.0	32.9	31.0	27.5
Averages, . . .	33.7	29.2	29.4	31.7	31.2	27.3	30.2	29.5	27.5	28.8

The Chamber of Commerce figures regarding the butter business in Boston for 1915 and 1916 are as follows: —

	1916. Pounds.	1915. Pounds.
Carried over in storage,	9,119,100	8,963,202
Receipts for January,	2,848,659	3,353,765
February,	3,769,297	3,089,346
March,	2,911,830	3,996,912
April,	4,052,249	5,674,340
May,	8,863,803	7,797,597
June,	16,361,341	16,267,690
July,	13,375,446	14,473,792
August,	9,680,632	10,149,845
September,	6,629,484	7,882,845
October,	5,188,022	4,273,764
November,	3,148,953	2,943,272
December,	2,475,818	2,178,513
Total supply,	88,424,634	91,044,883
Exports for year, deduct,	698,112	308,380
Net supply,	87,726,492	90,736,503
Storage stock ¹ January 1, deduct,	8,447,036	9,119,000
Consumption for year,	79,279,456	81,617,503

¹ Stock of Terminal Refrigerating Company not included January 1, 1917.

RECEIPTS OF CONDENSED MILK.

The Chamber of Commerce figures regarding the receipts of condensed milk at Boston for 1915 and 1916 are as follows: —

	1915.		1916.	
	Barrels.	Cases.	Barrels.	Cases.
January,	60	24,915	102	28,588
February,	226	41,733	71	36,339
March,	201	40,436	130	52,484
April,	302	39,980	233	46,987
May,	237	27,491	342	124,630
June,	264	37,407	998	113,489
July,	940	33,428	304	70,044
August,	1,223	22,515	53	70,780
September,	470	28,692	125	79,595
October,	1,222	29,877	49	68,745
November,	167	51,748	465	44,145
December,	64	31,250	73	26,620
Totals,	5,376	409,472	2,945	762,446

MILK.

Milk brought into Boston by Different Railroads, December 1, 1915, to November 30, 1916, as reported by the Public Service Commissioners (Quarts).

DATE.	Boston & Albany.	Boston & Maine.	New York, New Haven & Hartford.	Totals.
1915.				
December,	615,403	6,808,526	1,521,927	8,945,856
1916.				
January,	701,161	6,957,325	1,627,965	9,286,451
February,	727,720	6,686,546	1,496,699	8,910,965
March,	382,592	7,271,876	1,614,443	9,268,911
April,	718,742	7,028,386	1,669,509	9,416,637
May,	845,125 $\frac{3}{4}$	7,957,182	1,814,785	10,617,092 $\frac{3}{4}$
June,	820,126	7,353,317	2,084,549	10,257,992
July,	1,073,899	7,316,241	2,125,203	10,515,343
August,	1,107,427	7,123,805	2,110,465	10,341,697
September,	966,061	6,787,075	2,022,766	9,775,902
October,	896,028	7,847,783	1,863,593	10,607,404
November,	757,767	8,514,086	1,300,111	10,571,964
Totals,	9,612,051 $\frac{3}{4}$	87,652,148	21,252,015	118,516,214 $\frac{3}{4}$

Milk brought into Boston annually by Railroads for the Years Ending November 30, 1906, to November 30, 1916, inclusive (Quarts).

1906,	114,233,967
1907,	109,882,190 $\frac{1}{2}$
1908,	103,831,278 $\frac{1}{2}$
1909,	108,082,936
1910,	100,606,362 $\frac{1}{2}$
1911,	90,092,772
1912,	104,019,234
1913,	107,306,849
1914,	103,638,225
1915,	109,507,950 $\frac{3}{4}$
1916,	118,516,214 $\frac{3}{4}$

Comparative List of Number of Cows assessed in Massachusetts, May 1, 1906, April 1, 1915, and April 1, 1916.

COUNTIES.	1906.	1915.	1916.	DECREASE.		INCREASE.	
				1906-16.	1915-16.	1906-16.	1915-16.
Barnstable,	2,448	2,249	2,200	248	49	—	—
Berkshire,	17,404	14,113	14,509	2,895	—	—	396
Bristol,	13,702	12,447	13,477	225	—	—	1,030
Dukes,	656	637	681	—	—	25	44
Essex,	17,131	12,776	12,573	4,558	203	—	—
Franklin,	12,715	10,382	10,757	1,958	—	—	375
Hampden,	12,096	9,302	9,118	2,978	184	—	—
Hampshire,	14,383	11,433	11,585	2,798	—	—	152
Middlesex,	29,508	22,892	23,800	5,708	—	—	908
Nantucket,	378	420	359	19	61	—	—
Norfolk,	11,200	9,235	9,246	1,954	—	—	11
Plymouth,	8,465	7,477	7,663	802	—	—	186
Suffolk,	1,186	837	812	374	25	—	—
Worcester,	40,544	30,816	30,854	9,690	—	—	38
Massachusetts,	181,816	145,016	147,634	34,207	522	25	3,140

Net increase for State, 1915-16, 2,618.

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price.

LOCATION, FARM.	Owner and Manager.	Approximate Number of Cows.	Where marketed.
Agawam, Reilly Farm,	J. J. Reilly, owner and manager.	17	Springfield.
Agawam, Colonial Farm,	H. E. Bodurtha, owner and manager.	12	Springfield.
Agawam, Elm Shade Dairy,	S. S. & E. F. Bodurtha, owners and managers.	25	Springfield.
Amherst, H. M. Thompson's farm,	H. M. Thompson, owner and manager.	25	Holyoke.
Amherst, U. G. Groff's farm,	U. G. Groff, owner and manager.	34	Amherst.
Andover, Arden Farm,	Wm. M. Wood, owner; J. M. Putnam, superintendent; Austin C. Huggins, manager of creamery.	55	Andover, Lawrence, Woburn and Boston.
Andover, Shattuck Farms,	F. Shattuck, owner and manager.	50	Lawrence.
Arlington, L. M. Dolloff's farm,	L. M. Dolloff, owner and manager.	8	Arlington.

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price — Continued.

LOCATION, FARM.	Owner and Manager.	Approximate Number of Cows.	Where marketed.
Ashland, H. W. Chadbourne's farm,	H. W. Chadbourne, owner and manager.	37	Brookline, Newton and Boston.
Auburn, Wellswood Farm, . . .	George O. Keep, owner and manager.	30	Worcester.
Barnstable, Bay Farm, . . .	H. C. Everett, owner and manager.	—	Barnstable.
Barre, Highland View Farm, . . .	D. A. Howe, owner; W. E. Howe, manager.	25	Worcester.
Beverly, Bull Rush Farm, . . .	George R. Wales, owner and manager.	26	Beverly.
Beverly, Cherry Hill Farm, . . .	H. P. Hood & Sons, . . .	156	Brookline and Boston.
Bolton, Wataquodock Farm, . . .	Paul Cunningham, owner and manager.	35	Boston and vicinity, by Alden Brothers Company.
Braintree, F. H. Sanford's farm, . .	F. H. Sanford, owner and manager.	20	Braintree.
Brimfield, Clarence B. Brown's farm.	Clarence B. Brown, owner and manager.	21	West Warren.
Brockton (Montello Station), Dutchland Farm.	Fred F. Field, owner; Earl D. Upton, manager.	70	Brockton.
Brookline, Louis Cabot estate, . .	Louis Cabot, owner; R. Barkhouse, manager.	10	Brookline.
Charles River, Needham, Walker-Gordon Farm.	Walker-Gordon Laboratory Company, owner; John Nichols, manager.	100	Boston and vicinity.
Chilmark (West Tisbury P. O.), Oakview Farm.	J. F. Adams, owner and manager.	17	Vineyard Haven and Edgartown.
Concord, Middlesex School Farm, . .	Middlesex School, . . .	40	Concord.
Concord, Alfred Curtis farm, . . .	Alfred Curtis, owner and manager.	25	Concord.
Concord, Jens Michelson farm, . . .	Jens Michelson, owner and manager.	20	Concord.
Dighton, Rock Farm,	J. W. Earle, owner; Ralph Earle, manager.	15	Fall River.
Dorchester, Codman Farm,	Watson B. Fearing, owner and manager.	158	Boston.
East Lexington, Geo. C. Hatch farm,	George C. Hatch, owner and manager.	20	Arlington and Lexington.
East Lexington, Chester Lawrence farm.	Chester Lawrence, owner and manager.	10	Arlington and Lexington.
East Longmeadow, Peter Kronvall farm.	Mrs. Peter Kronvall, manager.	8	Springfield.
East Lynn,	J. D. Coombs, lessee and manager.	3	East Lynn.
East Walpole,	Geo. A. Plympton, owner; Eben Voorhees, manager.	100	Boston and vicinity, by Elm Farm Milk Company.
Everett, Joseph H. Cannell's farm,	Joseph H. Cannell, owner and manager.	7	Everett.
Everett, Thomas F. Leavitt's farm,	Thomas F. Leavitt, owner and manager.	8	Everett.
Fairhaven, Dana Farm,	Eliza N. and Edith Dana, owners and managers.	52	Fairhaven, Marion and Mattapoisett (in summer).
Fairhaven, Lewis F. Blossom's farm,	Lewis F. Blossom, owner and manager.	12	Fairhaven.
Framingham, Millwood Farm, . . .	Mrs. E. F. Bowditch, owner; J. P. Bowditch, manager; F. E. Barrett, superintendent.	300	Boston and Wellesley.
Framingham, Waveney Farm, . . .	Reginald W. Bird, owner; A. E. White, manager.	50	Boston, by Alden Brothers Company.
Framingham, Cherry Meadow Farm.	D. M. and E. F. Belches, owners; E. F. Belches, manager.	35	Framingham.

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price — Continued.

LOCATION, FARM.	Owner and Manager.	Approximate Number of Cows.	Where marketed.
Franklin, Ray Farm, . . .	E. K. Ray estate, owner; Joseph G. Ray, trustee and manager.	100	Boston, by Elm Farm Milk Company.
Gardner, Lakeside Farm, . . .	J. Henry Ware, owner and manager.	7	Gardner.
Gardner, Rockland Farm, . . .	Willis E. Knight, owner and manager.	25	Gardner.
Gardner, Otto Wickman's farm, . .	Otto Wickman, owner and manager.	5	Gardner.
Gloucester, Howard P. Lane's farm,	Howard P. Lane, owner and manager.	50	Gloucester.
Gloucester, H. Wallace Lane's farm,	H. Wallace Lane, owner and manager.	30	Gloucester.
Gloucester, Peter Hagstrom's farm,	Peter Hagstrom, owner and manager.	5	Gloucester.
Granby, C. W. Ball's farm, . . .	C. W. Ball, owner and manager.	29	Holyoke.
Great Barrington, Lone Pine Farm,	W. B. Nisbet, owner; Michael Conden, manager.	20	Great Barrington.
Greenfield, Wayside Farm, . . .	Frank H. Reed, owner; Mr. Purrington, manager.	25	Greenfield.
Groton, G. W. Greenhalge's farm, .	G. W. Greenhalge, owner and manager.	25	Boston and vicinity, by D. Whiting & Sons.
Hamilton, Miles River Farm, . .	Maxwell Norman, owner and manager; C. E. Johnson, superintendent.	75	Boston.
Hardwick, Louis H. Ruggles' farm,	Louis H. Ruggles, owner and manager.	60	Boston.
Hardwick, Mixter Farm, . . .	Mary A. Mixter, owner; Dr. Samuel J. Mixter, manager; J. S. Clark, superintendent.	200	Boston.
Haverhill (Bradford District), J. B. Sawyer's farm.	J. B. Sawyer, owner and manager.	—	Haverhill.
Haverhill, North Broadway Milk Farm.	E. A. Emerson, owner and manager.	40	Haverhill.
Haverhill (P. O. East Haverhill), Fred Kimball's farm.	Fred Kimball, owner; Leonard Kimball, manager.	50	Haverhill.
Holyoke, Whiting Farm, . . .	W. F. Whiting, owner; John F. Richardson, manager.	20	Holyoke.
Ipswich, Albert Elwell's farm, . .	Albert Elwell, owner and manager.	19	Ipswich and Essex.
Ipswich, Upland Farm, . . .	F. P. Frazier & Son, owner; Benj. F. Barnes, manager.	100	Boston, Manchester, Magnolia, Beverly and Beverly Farms.
Kingston, Miss Helen Holmes' farm,	Miss Helen Holmes, owner and manager.	20	Kingston.
Lee, John Goodrich's farm, . . .	John Goodrich, owner and manager.	40	Lee.
Leominster, Boutelle Farm, . . .	E. H. Boutelle, owner and manager.	30	Leominster.
Leominster, Sholan Farm, . . .	Paul Washburn, owner; A. G. Hollquist, manager.	40	Leominster.
Lexington, H. Swenson's farm, . .	H. Swenson, owner and manager.	40-50	Arlington, Cambridge and Somerville.
Lexington, Kelsey Ranch, . . .	Harry S. Kelsey, owner; S. H. Parks, superintendent.	52	Boston.

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price — Continued.

LOCATION, FARM.	Owner and Manager.	Approximate Number of Cows.	Where marketed.
Longmeadow, Hillbrow Farm, .	H. M. Burt, owner and manager.	20	Springfield.
Lowell, Hood Farm, . . .	C. I. Hood, owner; J. E. Dodge, manager.	120	Lowell.
Ludlow, E. E. Chapman's farm, .	Edward E. Chapman, owner and manager.	22	Ludlow and Indian Orchard.
Lunenburg, Clover Hill Farm, .	W. J. Fish, owner and manager.	60	Fitchburg.
Lunenburg, Sunnyside Farm, .	George M. Proctor, owner; Fred A. Miller, manager.	48	Fitchburg.
Lynnfield, N. F. McCarthy's farm,	N. F. McCarthy, owner; Eben Holmes, manager.	30	Wakefield.
Marlborough, Fairview Farm, .	Elmer D. Howe & Son, owners and managers.	10	Marlborough.
Medford, Hillside Farm, 20 Gow Street.	Alberton Harris, owner and manager.	10	Medford.
Medford, Mystic Valley Farm, 75 Arlington Street.	John J. Mulkerin, owner and manager.	16	Medford and Arlington.
Methuen, Bragdon Farms, . .	E. L. Bragdon, owner and manager.	30	Lawrence.
Methuen, Cox Farms, . . .	Louis Cox, owner; L. Coburn, manager.	31	Lawrence.
Methuen, Howe Farm, . . .	E. D. Taylor, owner and manager.	50	Lawrence.
Methuen, Spring Valley Farms, .	Fred Miller, owner and manager.	50	Lawrence.
Methuen, S. W. Williams' farm, .	S. W. Williams, owner and manager.	30	Lawrence.
Millis, Lowland Farm, . . .	E. F. Richardson, owner and manager.	25	Boston.
Milton, Highland Farm, . . .	Patriquin & Newton, lessees; George Patriquin, manager.	65	Milton.
Needham, K. E. Webb's farm, .	Kenneth E. Webb, owner and manager.	31	Needham.
Newton, Greenwood Farm, . .	M. Barry, owner and manager.	30	Brookline and Newton.
Newton (P. O. Waban), W. B. McMullin's farm.	William B. McMullin, owner and manager.	17	Needham and Newton.
Newtonville, Willow Farm, 120 Farwell Street.	D. F. Smith, owner and manager.	60	Newton, Brookline and Boston.
Norfolk, Meadowside Farm, . .	T. D. Cook & Co., owners and managers.	35	Boston.
North Amherst, The Elms, . . .	R. D. Dickinson, owner and manager.	30	Amherst.
North Amherst, E. C. Harlow's farm,	E. C. Harlow, . . .	35	-
Northampton, W. J. LaFleur's farm,	W. J. LaFleur, owner and manager.	14	Northampton.
Northampton (Florence), Strawberry Hill Farm.	Mrs. E. K. Learned, owner; Wilfred H. Learned, manager.	12	Northampton.
North Attleborough, Halliday Farm,	Fred F. Halliday, owner; Robert C. Halliday, manager.	9	Pawtucket, R. I.
North Brookfield, Blanchard Farm,	O. W. Means, owner and manager.	20-30	Springfield.
North Falmouth, Manuel G. White's farm.	Manuel G. White, owner and manager.	6	North Falmouth.
North Grafton, Bonnybrook Farm,	Everett N. Kearney, owner and manager.	60	Worcester.
North Tewksbury, Mountjoy, .	Miss Florence Nesmith, owner; C. E. Lougee, manager.	50	North Tewksbury.
North Tewksbury, Hood Farm, .	C. I. Hood, owner; J. E. Dodge, manager.	135	Lowell.

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price — Continued.

LOCATION, FARM.	Owner and Manager.	Ap-proxi-mate Num-ber of Cows.	Where marketed.
North Reading, H. A. Upton's farm,	H. A. Upton, owner and manager.	12	Peabody.
North Reading, Maple Leaf Farm,	W. P. Turner, owner and manager.	27	Everett.
Oak Bluffs, Woodsedge Farm,	F. W. Chase, owner and manager.	20	Oak Bluffs.
Paxton, E. G. Richards' farm,	E. G. Richards, owner and manager.	40	Worcester, by C. Brigham Com-pany.
Paxton, Echo Farm,	W. J. Woods, owner; Joseph Graham, manager.	40	Worcester, by C. Brigham Com-pany.
Pepperell, George Shattuck's farm,	George Shattuck, owner and manager.	75	Boston and vicinity, by D. Whiting & Sons.
Pittsfield, Abby Lodge,	A. W. Cooley, owner; Mr. Carlson, manager.	35	Boston.
Pittsfield, Mr. Bardwell's farm,	Mr. Bardwell, owner and manager.	14	Pittsfield.
Pittsfield, E. W. Page's farm,	E. W. Page, owner and manager.	8	Pittsfield.
Pittsfield, Sampson Farm,	Mrs. Charles Wilson, owner and manager.	24	Pittsfield.
Reading, Hillcrest Farm,	Lawrence B. Lewis, owner; Wm. Shaw, manager.	40	Malden.
Revere, Mrs. M. L. Mahoney's farm,	Mrs. M. L. Mahoney, owner; J. J. Mahoney, manager.	25	Malden.
Saugus, Oaklandvale Farm,	Frank P. Bennett, owner and manager.	112	Lynn.
South Hadley, Joseph A. Skinner's farm,	Joseph A. Skinner, owner and manager.	16	Holyoke.
South Hadley, Frank H. Metcalf's farm,	Frank H. Metcalf, owner; E. W. Turner, manager.	30	Holyoke.
South Hadley, H. B. Lang's farm,	H. B. Lang, owner and manager.	36	Holyoke.
South Hadley, John E. Lyman's farm,	John E. Lyman, owner and manager.	14	Holyoke.
South Hadley, James H. Jones' farm,	James H. Jones, owner and manager.	-	-
South Lincoln, South Lincoln Dairy Company.	South Lincoln Dairy Com-pany, owner; W. A. Blodgett, manager.	175	Boston, Cambridge and Brookline.
South Natick, Carver Hill Farm,	Carver Hill Farms, Inc., owners; Austin Potter, manager.	75	Wellesley, Boston, Natick, Needham, Brookline and Dover.
Southville, Waumesit Farm,	R. F. Parker, owner and manager.	20	Boston and vicinity, by C. Brigham Company.
Sherborn, H. N. Brown's farm,	H. N. Brown, owner and manager.	40	Boston.
Sherborn, Dexter Farm,	George T. Dexter, owner and manager.	23	Boston and vicinity, by Alden Brothers Company.
Sherborn, J. M. Merriam's farm,	J. M. Merriam, owner and manager.	40	Boston.
South Franklin, Ellersie Farm,	Oscar Swanson, owner; R. A. Messerli, manager.	75	Rhode Island and Boston.
Sterling, Twin Oaks Farm (P. O. Pratt's Junction).	James F. Pratt, owner and manager.	100	Milk, Boston, by Alden Brothers Com-pany; cream, Worcester.
Stoneham Valley Farm,	John P. Hylan, owner and manager.	11-12	Stoneham.
Stoughton, Tobey Farm,	E. B. Hutchins, owner and manager.	15	Brockton.
Swansea, Meadow Spring Farm,	Jas. H. Gildard, owner and manager.	8	Fall River.

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price — Concluded.

LOCATION, FARM.	Owner and Manager.	Approximate Number of Cows.	Where marketed.
Taunton, George Soper's farm, .	George Soper, owner and manager.	30	Taunton.
Templeton, Dolbear Hill Farm, .	Harvey O. Winch, owner and manager.	25	Gardner.
Waltham, Pleasantdale Farm, .	C. U. Hubbard, owner and manager.	35	Weston.
Warren, Maple Farm, . . .	J. R. Blair, owner and manager.	27	Boston, by C. Brigham Company.
Wayland, Perkins' Estate, . .	S. N. Sanders, manager, .	12	Waltham.
Westfield, Woronoak Farm, . .	Edgar L. Gillett, owner; N. J. Weidhaas, manager.	55	Westfield.
Weston, Charles Merriam's farm, .	Charles Merriam, owner and manager.	51	Waltham.
Weston, Ferndale,	Frank H. Pop, owner and manager.	70	Weston and Newton.
Westwood, Fox Hill Farm, . .	Joshua Crane, owner; L. W. Jackman, manager.	132	Boston.
West Newton and Barre, Wauwinet Farm.	George H. Ellis, owner; P. F. Staples and R. M. Handy, managers.	400	Boston, Brookline and Newton.
Woburn, John Day's farm, . .	John Day, owner and manager.	18	Winchester.
Worcester, Pleasant View Farm, .	Warren C. Jewett, owner and manager.	40	Worcester.
Worcester, Lewis J. Kendall's farm,	Lewis J. Kendall, owner and manager.	40	Worcester.
Worcester, Intervale Farm, . .	J. Lewis Ellsworth, owner and manager.	14	Worcester.
Worcester, Village Farm, . . .	H. B. Prentice, owner and manager.	30	Worcester.

NOTE. — Deerfoot Farms Dairy, office at 172 Tremont Street, wholesale distributing house at 132 Central Street, Boston, milk received from milk depots at Southborough and Northborough, sells milk of superior quality and cleanliness at a price above that of ordinary market milk, and handles the product of 129 dairy farms, averaging about 10 cows each, located in Southborough, Northborough, Westborough and Holliston. Most of these farms, therefore, at some time during the year come properly within the requirements of this list.

List of Massachusetts Dairy Farms making Certified Milk.

NAME, LOCATION.	Owner and Manager.	Certified by —	Approximate Number of Cows.	Where marketed.
Birchfield Farm, South Dartmouth.	Lawrence Grinnell, owner and manager.	Medical Milk Commission of New Bedford.	24	New Bedford.
Cedar Crest Farm, Waltham.	John C. Runkle, owner; Louis W. Dean, manager.	Medical Milk Commission of Cambridge.	90	North Shore, Cambridge and Boston.
Cedar Hill Farm, Waltham.	Miss Cornelia Warren, owner; Charles Cahill, manager.	Medical Commission of Cambridge.	124	Waltham, Cambridge and Boston.
Cherry Hill Farm, Beverly.	H. P. Hood & Sons, owners; O. H. Perrin, manager.	Medical Milk Commission of Boston.	300	Boston, North Shore and Lawrence.
A. D. Davis' farm, Sheffield.	A. D. Davis, owner and manager.	-	60	Some in Great Barrington; balance outside of State.
Gilbert Farms, Brookfield.	A. W. Gilbert, owner and manager.	Medical Milk Commission of Springfield.	20-25	Springfield.
Indian Bridge Farm, Wayland.	Edmund H. Sears, owner; Walter Jauncey, Jr., manager.	Medical Milk Commission of Cambridge.	16	Waltham.
Ledyard Farm, Andover.	J. A. & W. H. Gould, owners and managers.	Medical Milk Commission of Malden.	50	Malden, Melrose, Wakefield and Everett.
Massachusetts Agricultural College Farm, Amherst.	Massachusetts Agricultural College, J. A. Foord.	Medical Milk Commission of Boston.	65	Boston.
Oaks Farm, Cohasset.	C. W. Barron, owner; W. S. Kerr, manager.	Medical Milk Commission of Cohasset.	125	Cohasset, Brookline and Boston.
Oliver Prescott's farm, Dartmouth (P. O. North Dartmouth).	Oliver Prescott, owner; Harry W. Martin, manager.	Medical Milk Commission of New Bedford.	25	New Bedford.
Prospect Hill Farm, Essex.	J. A. & W. H. Gould, owners and managers.	Medical Milk Commission of Boston.	175	Boston, Brookline, Jamaica Plain and North Shore.
Seven Gates Farm, North Tisbury.	W. L. Webb, owner; O. L. Curtis, manager.	Medical Milk Commission of West Tisbury, Inc.	20-25	Marthas Vineyard.
Walter A. White's farm, Acushnet.	Walter A. White, owner and manager.	Medical Milk Commission of New Bedford.	30	New Bedford.

LIST OF LOCAL MILK INSPECTORS.

Milk Inspectors for Cities and Towns.

Adams,	Dr. A. G. Potter.
Amesbury,	James L. Stewart.
Amherst,	Nelson C. Haskell.
Andover,	Franklin H. Stacey.
Arlington,	L. L. Pierce, D.V.S.
Ashburnham,	James F. Hare.
Ashland,	Ralph W. Bell.
Athol,	John H. Meany, V.S.
Attleboro,	Solomon Fine.

Avon,	R. A. Elliott, M.D.
Barnstable,	George T. Mecarta.
Bedford,	Dr. Immanuel Pfeiffer.
Bellingham,	Dr. Norman P. Quint, West Medway.
Belmont,	Thomas F. Harris.
Berkley,	Alton A. Haskell.
Bernardston,	G. P. Morton.
Beverly,	Henry E. Dodge, 2d.
Billerica,	Albert H. Jones.
Boston,	Professor James O. Jordan.
Braintree,	F. Herbert Gile, M.D.
Bridgewater,	Joseph Brennan.
Brimfield,	J. Walter Brown.
Brockton,	George E. Bolling.
Brookline,	W. E. Ward.
Cambridge,	William A. Noonan, M.D.
Canton,	H. E. Berger, Jr., Wellesley Hills.
Carlisle,	Benjamin F. Blaisdell.
Charlemont,	Charles E. Graves.
Chelsea,	Dr. W. S. Walkley.
Chicopee,	C. J. O'Brien.
Clarksburg,	Cassius Quackenbush, North Adams.
Clinton,	Gilman L. Chase, M.D.
Cohasset,	Darius W. Gilbert, V.S.
Colrain,	J. D. Gilchrist, Griswoldville.
Concord,	Harry E. Tuttle.
Conway,	A. J. Patterson.
Dalton,	H. Ward Ford.
Dana,	Chas. W. Robertson, M.D., North Dana.
Danvers,	Wm. Hugo Nappe.
Dedham,	Edmand Knobel.
East Douglas,	Frank E. Correll.
Easthampton,	George L. McEvoy.
East Longmeadow,	Henry S. Ashley.
Everett,	E. Clarence Colby.
Fairhaven,	Andrew N. Bruckshaw, M.D.
Fall River,	Henry Boisseau.
Fitchburg,	John F. Bresnahan.
Framingham,	Fred S. Dodson.
Franklin,	J. Newton Blanchard.
Gardner,	Harry O. Knight.
Gill,	George L. Marshall.
Gloucester,	Dr. G. E. Watson.
Gosnold,	John T. Cornell, Cuttyhunk.
Great Barrington,	Dewitt Smith.
Greenfield,	George P. Moore.

Groton,	Herbert Rockwood.
Hadley,	Henry S. Shipman.
Hamilton,	Dr. C. S. Moore. ¹
Haverhill,	Dr. Homer L. Conner.
Hingham,	Quincy Bicknell.
Hinsdale,	Alfred N. Warren.
Holyoke,	Daniel P. Hartnett.
Housatonic,	J. J. Barr.
Hudson,	William H. Clark.
Hull,	Carroll A. Cleverly.
Lancaster,	George E. Howe.
Lawrence,	Dr. J. H. Tobin.
Lenox,	Joseph J. Kirby.
Leominster,	William H. Dodge.
Lexington,	L. L. Pierce, D.V.S., Arlington.
Littleton,	N. B. Conant.
Lowell,	Melvin F. Master.
Ludlow,	A. L. Bennett, D.V.S.
Lunenburg,	Dr. Charles E. Woods.
Lynn,	George A. Flanagan.
Lynnfield,	Franklin W. Freeman.
Malden,	J. A. Sanford.
Mansfield, ²	—
Marblehead,	Andrew M. Stone.
Marlborough,	John J. Cassidy.
Marion,	Chester A. Vose.
Medford,	Winslow Joyce.
Medway,	Norman P. Quint, West Medway.
Melrose,	H. E. Berger, Jr., Wellesley Hills.
Middleborough,	Dr. F. A. Robinson.
Milton,	Wallace C. Tucker.
Millbury,	Fred A. Watkins.
Monson,	Dr. E. W. Capen.
Montague,	Frank Dubie, Turners Falls.
Nahant,	Robert L. Cochrane.
Natick,	Thomas A. Doyle, D.V.M.
Needham,	H. E. Berger, Jr., Wellesley Hills.
New Bedford,	Herbert Hamilton, D.V.S.
Newburyport,	Dr. R. D. Hamilton.
Newton,	Arthur Hudson.
North Adams,	C. T. Quackenbush.
Northampton,	George R. Turner.
North Attleborough,	Hugh Gaw, D.V.S.
Northborough,	Everett C. Valentine.
North Brookfield,	Dr. Windsor R. Smith.

¹ Inspector of dairies.² Milk samples taken to Attleboro for inspection.

North Dana,	Chas. W. Robertson, M.D.
Northfield,	E. C. Field, Northfield Farms.
North Reading,	J. H. Spear.
Norton,	Edmund H. Elliot, Chartley.
Oxford,	Richard C. Taft.
Palmer,	M. H. Davitt, V.S.
Paxton,	H. S. Robinson.
Peabody,	Edward F. McHugh.
Pelham,	Charles H. Jones.
Pepperell,	Dr. Fred A. Davis, East Pepperell.
Pittsfield,	Dr. Bernard M. Collins.
Plainville,	John C. Eiden.
Plymouth,	Walton E. Briggs.
Provincetown,	Antone Dennis.
Quincy,	Daniel Scouler, Jr.
Reading,	Carl M. Smith.
Revere,	Joseph E. Lamb, M.D.
Rutland,	Lewis Drury.
Salem,	John J. McGrath.
Salisbury,	John F. Pike.
Sandwich,	J. E. Holway.
Saugus,	A. W. Sawyer.
Scituate,	George T. Otis.
Shelburne,	G. J. Tower, Shelburne Falls.
Shirley,	John H. Riley.
Shrewsbury,	C. I. Rich.
Somerville,	Herbert E. Bowman.
South Hadley,	George F. Boudreau.
Southborough,	Dr. John W. Robinson.
Southbridge,	Albert R. Brown.
Springfield,	Stephen C. Downs, Fred L. Robertson.
Sterling,	Arthur S. Wilder, Sterling Junction.
Stoneham,	Lawrence E. Doucett.
Stoughton,	William E. Ferrin.
Stow,	Fred E. Whitcomb.
Sutton,	Charles A. Hough.
Swampscott,	Clarence W. Horton.
Taunton,	Lewis I. Tucker.
Tisbury,	Charles S. Norton, Vineyard Haven.
Topsfield,	Charles S. Moore, Danvers.
Wakefield,	Carl M. Smith, Reading.
Waltham,	Charles M. Hennelly.
Ware,	Fred E. Marsh.
Wareham,	John J. Beaton.
Warren,	Joseph St. George.

Warwick,	Charles E. Stone.
Watertown,	E. B. Johnson.
Wellesley,	H. E. Berger, Jr.
Wendell,	Chas. A. Fiske.
Wenham,	C. W. Patch.
Westborough,	Charles H. Reed.
West Boylston,	Dr. A. M. Tyler.
Westfield,	William H. Porter.
Westport,	George A. Tripp.
Weston,	H. E. Berger, Jr., Wellesley Hills.
West Springfield,	J. A. Morrill.
Weymouth,	George B. Bayley, South Weymouth.
Whitman,	E. A. Dyer.
Williamstown,	G. S. Jordan, V.S.
Winchendon,	Dr. G. W. Stanbridge.
Winchester,	Maurice Dinneen.
Winthrop,	S. A. Mowry.
Woburn,	D. F. Callahan.
Worcester,	Gustaf L. Berg.

Each of the following towns has reported that milk inspection is done by its local board of health: —

Sherborn.	Walpole.
Stockbridge.	West Brookfield.
Sturbridge.	

The following towns report that the animal inspector of their town inspects the dairies: —

Foxborough.	Sturbridge.
-------------	-------------

CREAMERIES, MILK DEPOTS, ETC.

Co-operative Creameries.

NUMBER AND LOCATION.	Name.	Superintendent or Manager.
1. Ashfield,	Ashfield Creamery,	William Hunter, manager.
2. Belchertown,	Belchertown Creamery,	M. G. Ward, president.
3. Cummington,	Cummington Creamery,	D. C. Morey, superintendent.
4. Easthampton,	Hampton Creamery,	E. B. Clapp, treasurer.
5. Monterey,	Berkshire Hills Creamery,	F. A. Campbell, treasurer.
6. Northfield,	Northfield Creamery,	C. C. Stearns, treasurer.
7. Shelburne,	Shelburne Creamery,	E. P. Andrews, treasurer.

Proprietary Creameries.

NUMBER AND LOCATION.	Name.	Owner or Manager.
1. Amherst,	Amherst Creamery Company, .	R. W. Pease, manager.
2. Amherst,	Fort River Creamery, . . .	Clarence M. Wood, manager (estate of E. A. King, owner).
3. Heath,	Cold Spring Creamery, . . .	L. J. Fontaine, Waltham.
4. Hinsdale,	Hinsdale Creamery,	Walter C. Solomon, pro- prietor.

Educational.

LOCATION.	Name.	Manager.
Amherst,	Dairy Industry Course, Massachu- setts Agricultural College.	W. P. B. Lockwood, pro- fessor in charge.

Principal Milk-distributing Depots.

NAME.	Location.	Manager.
Acton Farms Milk Company, .	Somerville, Windsor Street, . .	Arthur B. Parker, treas- urer.
Alden Brothers Company, .	Boston office, 1171 Tremont Street; depot, 24-28 Duncan Street.	Charles L. Alden, Presi- dent; John Alden, treasurer.
Anderson Brothers,	Worcester, Eckman Street, . . .	Anderson Brothers.
Bonnie Brook Farms,	South Sudbury,	Norman E. Borden.
Mohawk Dairy Company, .	Boston office, 1047 Kimball Build- ing.	Claude E. Davis, treas- urer.
Boston Jersey Creamery, .	Boston, 9 Fulton Street, . . .	Theo. P. Grant, presi- dent and manager.
Brigham, C., Company, . .	Cambridge, 158 Massachusetts Av- enue.	John K. Whiting.
Brigham, C., Company, . .	Worcester, 9 Howard Street, . .	C. Brigham Company.
Bristol Creamery Company, .	Boston, 132 Central Street, . . .	William L. Johnson.
Columbia Creamery,	Springfield, 117 Lyman Street, .	H. A. Mosely.
Deerfoot Farms Dairy, . . .	Boston, 132 Central Street; depots at Northborough and Southbor- ough.	S. H. Howes.
Elm Farm Milk Company, .	Boston, Wales Place,	James H. Knapp, treas- urer.
Elm Spring Farm,	Waltham, Ellison Road,	G. W. Barrow.
Franklin Creamery Company,	Boston, 147 Harrison Avenue, . .	Tait Brothers.
Hampden Creamery Company,	Everett, Orient Avenue,	Frank H. Adams, treas- urer.
Hood, H. P., & Sons,	Boston, 404 Rutherford Avenue; branches, 24 Anson Street, Forest Hills; 886 Broadway, Chelsea; 298 Dorchester Avenue, South Boston. Brookline, 136 Westbourne Terrace. Lawrence, 629 Common Street. Lynn, 193 Alley Street. Malden, 425 Main Street. Medford, 452 High Street. Watertown, 479 Pleasant Street.	Charles H. Hood.

Principal Milk-distributing Depots — Concluded.

NAME.	Location.	Manager.
Learned, G. S. (Fitchburg Creamery).	Fitchburg, 26 Cushing Street, .	G. S. Learned.
Llanwhitkell Farms Creamery,	Boston, 23 Ferry Street, . .	Nelson P. Cook, manager.
Lyndonville Creamery Association.	Watertown, 86 Elm Street, . .	Willis C. Conner, manager.
Nash, Charles A., . . .	Springfield, 120 Oakland Street, .	Charles A. Nash, manager.
Newhall, J. A., . . .	Newburyport, 32 Monroe Street, .	J. A. Newhall.
Perry, A. D., . . .	Worcester, Kansas Street, . .	A. D. Perry.
Plymouth Creamery Company,	Boston, 268-270 State Street, .	John W. Davies.
Prentice, H. H., & Co. (Berkshire Creamery).	Pittsfield, Crane Avenue, . .	H. H. Prentice.
Rockingham Milk Company, .	Charlestown, Boston office, Hancock Square; depot 330 Rutherford Avenue.	Rolan H. Toothaker, president.
Somers Creamery Company, .	Springfield, 178 Dwight Street, .	W. M. Cushman.
Springfield Creamery, . .	Springfield, Main Street, . .	F. B. Allen, proprietor.
Tait Brothers, . . .	Springfield, 37 Vinton Street, .	Tait Brothers, proprietors.
Turgeon, Frank H., . . .	Boston, 213 Camden Street, . .	Frank H. Turgeon.
Turner Center Dairying Association.	Boston office, 63, 67 and 69 Endicott Street.	Irven L. Smith, manager.
Wachusett Creamery, . .	Worcester, 6 Lincoln Street, . .	E. H. Thayer & Co., proprietors.
Whiting, D., & Sons, . .	Boston, 570 Rutherford Avenue, .	George Whiting.

Modified Milk Laboratory.

H. P. Hood & Sons, . . .	Boston, 494 Rutherford Avenue, .	C. H. Hood.
Walker-Gordon Laboratory, .	Boston, 1106 Boylston Street, .	George W. Franklin.
D. Whiting & Sons, . . .	Boston, 570 Rutherford Avenue, .	George Whiting.

Receiving Depot for Milk, for Shipments to New Rochelle.

Borden Condensed Milk Company.	West Stockbridge.	
Willow Brook Dairy Company,	Sheffield,	Frank Percy.
Willow Brook Dairy Company,	North Egremont,	George Wyble.

ENCOURAGEMENT OF DAIRYING EXPENSES.

Agents, compensation,	\$294 00
Agents, expenses,	605 72
Total,	\$899 72
Cash prizes,	2,836 38
Total expenditures,	\$3,736 10

REGULAR BUREAU EXPENSES.

The following is a classified statement of the expenses for the year ending November 30, 1916:—

Agents, expenses,	\$1,547 06
Agents, compensation,	2,684 00
Bureau, expenses,	389 11
Bureau, compensation,	330 00
Samples purchased,	157 28
General agent, traveling expenses,	341 45
Analysts, analyses,	300 50
Analysts, court attendance,	60 00
Photography, lantern slides, etc.,	183 40
Mileage,	360 00
Postage,	100 00
Assistants at Public Service Commission hearing,	17 78
Telephone,	35 65
Printing,	967 21
Supplies,	226 56
Bacteriological laboratory,	300 00
<hr/>	
Total,	\$8,000 00

P. M. HARWOOD,
General Agent.

Accepted and adopted as the report of the Dairy Bureau.

OMER E. BRADWAY.
GEORGE W. TRULL.
GEORGE E. TAYLOR, JR.

TWENTY-SEVENTH ANNUAL REPORT

OF THE

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 12, 1918.



BOSTON:
WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
32 DERNE STREET.
1918.

TWENTY-SEVENTH ANNUAL REPORT

OF THE

Memo:

DAIRY BUREAU

OF THE

MASSACHUSETTS BOARD OF AGRICULTURE,

REQUIRED UNDER

CHAPTER 89, SECTION 12, REVISED LAWS.

JANUARY 12, 1918.



BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
32 DERNE STREET.

1918.

C
B

1913

STATE OF NEW YORK

PUBLICATION OF THIS DOCUMENT
APPROVED BY THE
SUPERVISOR OF ADMINISTRATION.

MAILED 11/13
70
STATIONER GENERAL

614.32 M3

W13 n

1917

B

DAIRY BUREAU—1917.

OMER E. BRADWAY, MONSON, *Chairman.*

GEORGE W. TRULL, TEWKSBURY, P. O. LOWELL, R. F. D.

GEORGE E. TAYLOR, JR., SHELBURNE.

Secretary.

WILFRID WHEELER, *Executive Officer and Secretary of the State
Board of Agriculture.*

General Agent.

P. M. HARWOOD,

ADDRESS, ROOM 136, STATE HOUSE, BOSTON.



The Commonwealth of Massachusetts.

REPORT OF THE DAIRY BUREAU.

The European war, in which this country is at present engaged, has not been without its effect on the work of the Dairy Bureau. Resulting high prices have led to increased law violations on the one hand, while on the other, scarcity of labor on dairy farms has caused a decreased number of entries in the clean milking contest.

The number of prosecutions for violations of dairy laws was 93, convictions being obtained in all cases; 40 of these were for violations of oleomargarine laws, 49 for violation of the renovated butter law, and 4 for selling adulterated milk. Sales of condensed and evaporated milk have been investigated, but no violation was found to warrant prosecution. The total number of inspections of stores, wagons, etc., for the year was 6,540.

The number of entries in the clean milking contest was 352, and 138 prizes were awarded. Details of this contest will be found in a special report upon the subject.

PUBLICATIONS.

A new illustrated folder on the food value of milk, prepared by the general agent, was published, and 35,000 copies have been distributed. Leaflets E, F, G, H, I and J, by the same author, and all relating to milk, its food value, its products or its production, have been published, and approximately 250,000 copies have been distributed.

Supplements of the dairy laws, embodying 1916 and 1917 legislation, have been published. A list of Massachusetts dairymen owning three or more cows is being prepared.

LECTURES, CONFERENCES AND CONVENTIONS.

The general agent has delivered fifteen lectures on dairy subjects during the year. He represented the Board of Agriculture at two conferences on food production with the Federal Food Administration and the Department of Agriculture, at Washington, District of Columbia. He also represented the Dairy Bureau at a mass meeting of Dairy Interests, held at Columbus, Ohio, in connection with the National Dairy Show.

Agent A. W. Lombard attended the annual meeting of the International Association of Dairy and Milk Inspectors at Washington, District of Columbia, where he read a paper and was elected president of the association for the ensuing year.

INVESTIGATIONS.

The chairman of the Bureau, with one member and the general agent, spent several days investigating creameries, milk stations and dairies in Vermont, with a view to obtaining first-hand information as to the result of co-operation as practiced in that State. The following cities and towns were visited: Brattleboro, Wardsboro, South Londonderry, Peru, Pawlet, Ira, Rutland, Bridport, Vergennes, Burlington, St. Albans, Enosburg Falls, East Berkshire, Alberg, South Hero, Richmond, Bolton, Stow, East Hardwick and St. Johnsbury. At Richmond the Bureau found an ideal milk plant, a real model of its kind. A similar plant has just been completed at East Berkshire, and we were informed that one was to be built this winter at Newport. What was once pronounced by a Federal inspector as the cleanest creamery in the United States is at Wardsboro, and is operated by a woman, Miss Hanna Halonen. The product of this creamery is sold in North Adams, Massachusetts. We were especially impressed with the excellent butter made at Mount Mansfield Creamery in Stow, a sample of which won first prize at the recent Eastern States Exposition held in Springfield, Massachusetts. The Lamoile Valley Creamery at East Hardwick was particularly interesting from the fact that it is the largest creamery in New England. No one can travel over the State of Vermont without being im-

pressed with its wonderful adaptability for dairying. Thousands of acres by the shores of Lake Champlain, along the river valleys and up and down the hillsides of the State show wonderful natural fertility of soil, and produce an abundance of sweet grasses necessary for dairy production of quality. Several cheese factories were visited, notably those at Pawlet and Ira, also two condensaries, one at St. Albans, owned by H. P. Hood & Sons of Boston, and the other at Enosburg Falls, owned by the Federal Packing Company of Philadelphia. Many of the farmers keep from forty to fifty cows, and some have dairies of one hundred or more each. Other sources of income for the farmers of the State are livestock, hay, potatoes, sweet corn and string beans sold to canneries and maple sugar.

DAIRY EXHIBITS.

The Bureau made an exhibit of the results of the 1916 clean milking contest, together with a display of food value of milk, chemical analysis of milk, and photographs relating to dairy and country life, at the Public Winter Meeting of the State Board of Agriculture at Springfield. This exhibit attracted much attention and favorable comment. The Bureau also aided in the milk show which was conducted by the Allied Dairy Interests. The Bureau furnished an exhibit for health week in Winchendon in February; also for farmers' week at Amherst in March, at Palmer Fair in September, and at the Eastern States Exposition at Springfield in October. The agricultural exhibit at the latter show, and the general show held in connection with the Public Winter Meeting of the State Board of Agriculture, were superintended by Agent A. W. Lombard.

LEGISLATION.

The Bureau proposed no milk legislation, but labored to secure the passage of the following general acts, viz.: chapter 112, prohibiting the charging of fees for dairy, milk and livestock inspection; chapter 189, harmonizing the relationship of total milk solids and milk fat in the legal standard; chapter 224, permitting the incorporation of agricultural and horticultural organizations under laws relating to business corporations; chapter 256, establishing Grade A Massachusetts milk;

and chapter 259, defining pasteurized milk and regulating its sale. Chapter 256 we believe to be a step in the right direction, but as amended and finally passed its usefulness was greatly impaired.

THE DAIRY SITUATION.

It has been the policy of this department for years to make clear to the consumer the food value of milk in the hope that increased consumption would ultimately result in making milk production independently profitable. We have opposed all schemes which tended to discourage people from using milk, or to encumber the business with needless expense. During the early autumn months of 1917 the Massachusetts public, becoming accustomed to the general advance in food prices, apparently viewed with a fair degree of equanimity the proposed advance in milk prices, and it looked as though the milk business might, at last, be placed on a satisfactory basis. The New England Milk Producers' Association had demanded 8 cents a quart delivered in Boston, and that price was approved by the Food Administrator. Suddenly one of the large dealers made a proposition to sell milk in some 50 stores for 10 cents a quart, provided 10 tickets costing \$1 were purchased. This proposition, which was at first agreed to by the Food Administrator, was later canceled. Previously, in both New York and Chicago, the producers had made unreasonable demands which resulted in prejudicing the public mind against paying advanced prices for milk anywhere. The Federal Food Administration finally called for the establishment of regional boards to investigate the cost of milk production and milk distribution, and to fix prices. The contracts made between the dealers and the New England Milk Producers' Association for milk to be delivered in Boston at 8 cents per quart were suspended, and $7\frac{1}{2}$ cents per quart was decided upon as the price to be paid producers, pending the investigations, and the assurance was given that the prices would be made on a basis of reasonable profit to the producer. (Since the above was written the regional board has fixed the price to producers at $8\frac{1}{2}$ cents per quart for milk delivered in Boston during January, February and March, and the retail price to family trade, delivered, at $14\frac{1}{2}$ cents per quart.)

In view of danger of future shortage of cows this department last spring published a statement and distributed it among farmers, urging them not to sell their stock and to raise all the good heifer calves possible, because the prices of both dairy cattle and milk would steadily increase. We are now officially informed that the world's shortage of cattle is upwards of 28,000,000 head. On account of the shortage of hired men on dairy farms we have also urged that, whenever possible, milking machines be used on the larger farms, while on the smaller farms women and children unite with the older men to relieve the situation.

When considering the milk question it should be borne in mind that even at 15 cents a quart milk is one of the cheapest animal foods obtainable; that children cannot thrive well without it; that market-milk production is not and never has been over profitable; and that the dairy farmer must realize a profit in order that he may continue in business. The consumer should always remember that he cannot well do without milk, and that the producer can earn his living in some other way; that, *food value considered*, butter at 60 cents a pound is cheaper than any butter substitute, and that milk, cream, butter and cheese contain growth-promoting factors which either do not exist at all, or exist in far less degree, in their substitutes. At the recent National Dairy Show at Columbus, Ohio, experiments with growing rats were in progress, showing that animals fed on rations containing milk fat thrived, while others fed on rations in which vegetable oils had been substituted were wasting and dying. Yet some food economics teachers are encouraging the use of butter substitutes. Slowly but surely the consuming public is coming to appreciate the real facts concerning the food value of milk and milk products, their vitamins, ready digestibility and general all-round superiority. To deprive children or even grown people of an abundance of milk, cream, butter and cheese is poor economy, while depriving children of these essentials, especially milk, is near criminal. By substituting milk and milk products for meats in daily rations a material financial saving can be made.

DAIRY STATISTICS.

The number of dairy cows assessed in this Commonwealth April 1, 1917, was 149,077, which, compared with 147,634 assessed in 1916, shows an increase of 1,443. This condition is gratifying, for, excepting the loss by foot and mouth disease in 1915, there has been no decrease due to adverse dairy conditions in the last three years.

For the year ending November 30, 1917, 142,474,364 quarts of milk were shipped into Boston by rail, and the year previous 118,516,214 $\frac{3}{4}$ quarts of milk were shipped into Boston, showing the large increase in 1917 of 23,958,149 $\frac{1}{4}$ quarts.

PROPOSED GRADE HEIFER CONTEST.

The Legislature of 1916 placed at the disposal of the State Board of Agriculture a sum not exceeding \$5,000 annually for three years, to be expended in the encouragement of practical dairying and the production of milk and dairy products of superior cleanliness, and in developing the live-stock industry of the State.

For several years we have conducted clean milking and other contests. We now propose to encourage the rearing of grade heifers from good milking strains of dairy animals.

For best heifers sired by pure-bred Ayrshire, Brown Swiss, Guernsey, Holstein-Friesian, Jersey or Shorthorn bulls, and from high-producing grade dams of any breed, heifers to be born between April 1, 1917, and July 31, 1918, inclusive, prizes aggregating \$3,000 are offered.

Class.		First Prize.	Second Prize.	Third Prize.	Fourth Prize.	Fifth Prize.	Sixth Prize.	Seventh Prize.	Eighth Prize.
I.	Best 6 grade Ayrshire heifers, . . .	\$60	\$50	\$40	\$35	\$30	\$25	\$20	\$10
II.	Best 6 grade Brown Swiss heifers, . . .	60	50	40	35	30	25	20	10
III.	Best 6 grade Guernsey heifers, . . .	60	50	40	35	30	25	20	10
IV.	Best 6 grade Holstein-Friesian heifers, . . .	60	50	40	35	30	25	20	10
V.	Best 6 grade Jersey heifers, . . .	60	50	40	35	30	25	20	10
VI.	Best 6 grade Shorthorn heifers, . . .	60	50	40	35	30	25	20	10
VII.	Best 3 grade Ayrshire heifers, . . .	35	30	25	20	15	13	10	7
VIII.	Best 3 grade Brown Swiss heifers, . . .	35	30	25	20	15	13	10	7
IX.	Best 3 grade Guernsey heifers, . . .	35	30	25	20	15	13	10	7
X.	Best 3 grade Holstein-Friesian heifers, . . .	35	30	25	20	15	13	10	7
XI.	Best 3 grade Jersey heifers, . . .	35	30	25	20	15	13	10	7
XII.	Best 3 grade Shorthorn heifers, . . .	35	30	25	20	15	13	10	7
XIII.	Best single grade Ayrshire heifer, . . .	15	14	12	10	9	6	5	4
XIV.	Best single grade Brown Swiss heifer, . . .	15	14	12	10	9	6	5	4
XV.	Best single grade Guernsey heifer, . . .	15	14	12	10	9	6	5	4
XVI.	Best single grade Holstein-Friesian heifer, . . .	15	14	12	10	9	6	5	4
XVII.	Best single grade Jersey heifer, . . .	15	14	12	10	9	6	5	4
XVIII.	Best single grade Shorthorn heifer, . . .	15	14	12	10	9	6	5	4

GRATUITIES.

In meritorious instances gratuities may be recommended by the judges, and may equal but shall not exceed the amount offered as the eighth prize in each class, and the payment of such gratuities will depend upon money made available as unused prize money.

RULES.

1. These prizes are open for contest only for animals owned by practical dairy farmers who superintend their own dairies and gain their principal livelihood from their farm, and for animals owned by wives, sons or unmarried daughters of such eligible farmers, provided their animals are kept upon said farm and the owners live upon said farm and are mainly dependent on the farm for a livelihood.

2. All heifers eligible for entry must have been sired by pure-bred bulls which are either registered or eligible for registry. Satisfactory proof must be furnished in each instance. In case of registered bulls the certificate of registry will be accepted. In case of pure-bred bulls eligible for registry satisfactory affidavits must be filed at the time of entry.

3. All animals must have been bred and raised by the exhibitor.

4. No animal will be eligible in more than one class.

5. All entries must be made on or before July 31, 1918.

6. All animals must be exhibited at the 1918 annual exhibition of an agricultural society receiving bounty from the State, or such other place as shall be approved by the Dairy Bureau of the State Board of Agriculture, and the exhibit may be made at the society's grounds or approved place most convenient for the exhibitor.

7. Animals will be scored and judged by competent experts, and the decision of these judges shall be final.

8. No prize shall be allowed for unmeritorious animals.

9. The right to reject or cancel any and all entries is reserved by the Dairy Bureau.

10. Results will be announced as soon as possible after the close of the contest.

11. A certificate of award will accompany each cash prize.

CONDENSED MILK.

The reports of the Boston Chamber of Commerce show that the amount of condensed milk handled in Boston in 1917 was 50,337 barrels and 880,072 cases. This shows an increase over 1916 of 47,392 barrels and 117,626 cases. (See table on page 18.)

OLEOMARGARINE.

The United States licenses for the sale of oleomargarine in force in Massachusetts November 30, 1917, were: manufacturers, 3; wholesale dealers, 73; and retail dealers, 3,078; making a total of 3,154, or more than three times the number (916) reported for November, 1916. The manufacturers are as follows: Swift & Co., Gore Street, East Cambridge; Sam C.

Smith, 179 Dale Street, Waltham; and Sweet Nut Butter Company, rear of 159 Green Street, Jamaica Plain. An oleomargarine made of vegetable oils churned in milk has come upon the market in considerable quantities during the year.

The number of packages handled in Boston in 1916 as reported by the Chamber of Commerce was 40,998, and in 1917, 75,662, an increase of 34,664 packages.

For the year ending June 30, 1917, there has been a total increase in the production of oleomargarine in the United States of 80,660,198 pounds over that of the year ending June 30, 1916. This increase in the manufacture of oleomargarine is caused by a slightly increased export demand, by the increased price of butter, and by the boost given consumption by government propaganda and household economics teachings. (See table on page 16.)

RENOVATED BUTTER.

There were 27,507,982 pounds of renovated butter produced in the United States in 1917, while in 1916 there were 34,514,527 pounds, showing a decrease of 7,006,545 pounds. The high-water mark in renovated butter production, 62,965,613 pounds, was reached in 1907. Since that date there has been a general though not constant decline in the manufacture of this product. (See table on page 17.)

BUTTER.

The average wholesale price of butter in Boston market for 1917, according to the Chamber of Commerce figures, was 41.5 cents, while in 1916 it was 33.7 cents, showing an increase of 7.8 cents.

The consumption of butter, Boston output, for 1916 was 79,279,456 pounds, and for 1917, 69,665,081 pounds, showing a decrease of 9,614,375 pounds, due in part to the high price of butter, but in our judgment due still more to increased sales of oleomargarine. This situation is unfortunate for consumers, especially those with children, for the growth-promoting factors present in butter do not exist in any like degree in oleomargarine. (See tables on pages 17 and 18.)

LOCAL MILK INSPECTORS.

A list of the local inspectors of milk in the State will be found on page 25 of this report. The Bureau acknowledges its indebtedness to, and appreciation for the assistance and hearty co-operation of, these local inspectors.

PERSONNEL OF THE BUREAU.

The personnel of the Bureau remains unchanged, and is as follows: Omer E. Bradway of Monson, chairman, George W. Trull of Tewksbury and George E. Taylor, Jr., of Shelburne. The executive force, agents, analysts, etc., are as follows: executive officer and secretary, Wilfrid Wheeler; general agent, P. M. Harwood; analysts, B. F. Davenport, M.D., Boston, and Gilbert L. Clark, Emerson Laboratory, Springfield; agent, A. W. Lombard; and five temporary agents have been employed.

SUMMARY OF POLICE WORK.

Total number of inspections,	6,540 ¹
Number of inspections where no samples were taken,	5,376
Number of samples of butter, oleomargarine and renovated butter,	
all purchased,	1,135
Number of samples of milk and cream,	95
Cases entered in court,	93
Convictions,	93

Cases prosecuted during the twelve months ending November 30, 1917, are summarized as follows:—

¹ There were 66 extra samples taken during the year, therefore this number is 66 less than the sum of the next three items.

CITY OR TOWN.	Where tried.	Month.	Number.	Law violated.	Convictions.
Lynn, . . .	Lynn, . . .	December, .	4	4 oleomargarine, . . .	4
Peabody, . . .	Peabody, . . .	December, .	5	2 renovated butter, 3 oleomargarine.	5
Lowell, . . .	Lowell, . . .	January, .	4	4 renovated butter, . . .	4
Brockton, . . .	Brockton, . . .	January, .	2	2 renovated butter, . . .	2
Taunton, . . .	Taunton, . . .	February, .	1	1 milk,	1
Ipswich, . . .	Ipswich, . . .	February, .	2	2 renovated butter, . . .	2
Lowell, . . .	Lowell, . . .	February, .	2	2 renovated butter, . . .	2
Lawrence, . . .	Lawrence, . . .	February, .	2	2 oleomargarine, . . .	2
New Braintree, .	Barre, . . .	February, .	1	1 milk,	1
Wareham, . . .	Wareham, . . .	March, .	2	2 renovated butter, . . .	2
Holyoke, . . .	Holyoke, . . .	March, .	4	2 renovated butter, 2 oleomargarine.	4
Hudson, . . .	Hudson, . . .	April, .	2	2 renovated butter, . . .	2
Worcester, . . .	Worcester, . . .	April, .	19	4 renovated butter, 15 oleomargarine.	19
Spencer, . . .	East Brookfield, .	April, .	6	4 renovated butter, 2 oleomargarine.	6
Worcester, . . .	Worcester, . . .	April, .	2	2 oleomargarine, . . .	2
Webster, . . .	Webster, . . .	April, .	4	4 renovated butter, . . .	4
Hubbardston, . .	Gardner, . . .	April, .	2	2 milk,	2
Norwood, . . .	Dedham, . . .	April, .	2	2 renovated butter, . . .	2
Worcester, . . .	Worcester, . . .	May, .	2	2 oleomargarine, . . .	2
Southbridge, . .	Southbridge, . . .	May, .	4	4 renovated butter, . . .	4
Athol, . . .	Athol, . . .	May, .	2	2 oleomargarine, . . .	2
Fitchburg, . . .	Fitchburg, . . .	May, .	6	6 oleomargarine, . . .	6
Everett, . . .	Malden, . . .	May, .	1	1 renovated butter, . . .	1
Worcester, . . .	Worcester, . . .	June, .	2	2 oleomargarine, . . .	2
Quincy, . . .	Quincy, . . .	June, .	5	4 oleomargarine, 1 renovated butter.	5
Cambridge, . . .	Cambridge, . . .	June, .	2	2 renovated butter, . . .	2
Natick, . . .	Natick, . . .	June, .	2	2 renovated butter, . . .	2
Brockton, . . .	Brockton, . . .	June, .	1	1 renovated butter, . . .	1
Totals, . . .	. . . . .	. . . . .	93	. . . . .	93

The charges in the several cases entered in court for the year ending November 30, 1917, have been as follows: —

Selling renovated butter in unmarked packages,	49
Furnishing oleomargarine in restaurants, etc., without notice to guests,	33
Selling oleomargarine in unmarked packages,	6
Selling oleomargarine without registering with local milk inspector,	1
Selling adulterated milk,	4

The following table shows the inspections without samples and the number of samples taken during the past fifteen years:—

YEARS.	Inspections without Samples.	Samples.
1903-16 (inclusive),	77,901	22,348
1917,	5,376	1,164
Total for fifteen years, Average,	83,277 5,551	23,512 1,567

OLEOMARGARINE.

The following figures, taken from the annual report of the United States Commissioner of Internal Revenue for 1917, show the production, withdrawn tax paid, withdrawn for export, and withdrawn for use of the United States, of the two classes of oleomargarine, as defined by act of May 9, 1902, covering the period of fifteen years since it went into effect, July 1, 1902:—

Oleomargarine (Pounds).

YEAR.	PRODUCT TAXED AT RATE OF 10 CENTS PER POUND.				PRODUCT TAXED AT RATE OF ¼ CENT PER POUND.			
	Pro- duced.	With- drawn Tax paid.	With- drawn for Export.	With- drawn Free of Tax for Use of the United States.	Produced.	With- drawn Tax paid.	With- drawn for Export.	With- drawn Free of Tax for Use of the United States.
1903, . . .	5,710,407	2,312,493	3,334,969	—	67,573,689	66,785,796	151,693	—
1904, . . .	3,785,670	1,297,068	2,504,940	—	46,413,972	46,397,984	123,425	—
1905, . . .	5,560,304	3,121,640	2,405,763	—	46,427,032	46,223,691	137,670	—
1906, . . .	4,888,986	2,503,095	2,422,320	—	50,545,914	50,536,466	78,750	—
1907, . . .	7,758,529	5,009,094	2,695,276	—	63,608,246	63,303,016	129,350	—
1908, . . .	7,452,800	4,982,029	2,522,188	—	74,072,500	73,916,869	109,480	—
1909, . . .	5,710,301	3,275,968	2,403,742	—	86,572,514	86,221,310	112,958	—
1910, . . .	6,176,991	3,416,286	2,767,195	—	135,685,289	135,159,429	97,575	—
1911, . . .	5,830,995	2,764,971	3,054,344	—	115,331,800	115,448,006	91,750	—
1912, . . .	6,235,639	3,174,331	3,044,122	—	122,365,414	121,945,038	106,160	—
1913, . . .	6,520,436	4,090,658	2,417,973	3,300	138,707,426	138,242,848	59,686	—
1914, . . .	6,384,222	3,831,706	2,121,162	469,340	137,637,054	137,747,982	22,540	110,020
1915, . . .	7,595,141	3,753,012	3,081,356	734,030	138,214,907	137,693,610	31,172	—
1916, . . .	6,748,940	3,403,287	2,561,613	746,281	145,760,973	145,443,578	26,076	2,250
1917, . . .	8,012,031	4,476,351	2,752,431	723,248	225,158,080	224,047,821	141,835	2,400
Total, . .	94,371,392	51,411,989	40,089,394	2,676,199	1,594,075,110	1,589,113,444	1,420,120	114,670

RENOVATED BUTTER.

The following figures, from the same source as the preceding table, show the production and withdrawn tax paid of renovated butter, 1903-17:—

Renovated Butter (Pounds).

YEAR.	Production.	Withdrawn Tax paid.
1903,	54,658,790	54,223,234
1904,	54,171,183	54,204,478
1905,	60,029,421	60,171,504
1906,	53,549,900	53,361,088
1907,	62,965,613	63,078,504
1908,	50,479,489	50,411,446
1909,	47,345,361	47,402,382
1910,	47,433,575	47,378,446
1911,	39,292,591	39,352,445
1912,	46,387,398	46,413,895
1913,	38,354,762	38,285,114
1914,	32,470,030	32,513,244
1915,	39,056,180	38,924,828
1916,	34,514,527	34,572,335
1917,	27,507,982	27,649,487
Total,	688,216,802	687,942,430

BUTTER.

The following table shows average quotations for the best fresh creamery butter, in a strictly wholesale way, in the Boston market for the last ten years, as compiled by the Boston Chamber of Commerce:—

MONTHS.	1917. Cents.	1916. Cents.	1915. Cents.	1914. Cents.	1913. Cents.	1912. Cents.	1911. Cents.	1910. Cents.	1909. Cents.	1908. Cents.
January, . . .	38.3	32.0	32.5	32.5	33.9	36.9	28.8	33.5	30.9	29.7
February, . . .	39.2	32.0	31.1	28.8	34.9	32.5	26.9	30.5	30.0	32.1
March, . . .	39.7	34.5	30.3	27.7	36.4	32.1	24.2	32.0	29.1	30.2
April, . . .	44.2	35.9	30.1	25.1	34.5	32.7	21.7	31.5	27.9	28.4
May, . . .	40.5	35.4	28.7	25.8	28.7	30.4	22.8	29.0	26.6	24.1
June, . . .	39.1	29.7	28.5	27.5	28.2	27.9	24.2	28.2	26.4	24.5
July, . . .	39.1	29.0	27.3	27.9	27.5	28.1	26.0	28.6	27.2	23.6
August, . . .	41.2	31.2	26.0	30.1	28.2	27.1	27.2	29.6	28.2	24.5
September, . .	44.4	33.6	27.1	30.9	31.3	29.1	27.7	29.6	31.3	25.3
October, . . .	44.4	35.1	28.5	30.9	31.2	31.0	30.4	29.4	31.7	27.5
November, . . .	43.6	37.6	29.1	32.4	31.9	32.9	32.5	30.2	31.4	29.5
December, . . .	45.4	38.5	31.2	32.7	33.8	34.0	35.0	30.0	32.9	31.0
Averages, . . .	41.5	33.7	29.2	29.4	31.7	31.2	27.3	30.2	29.5	27.5

The Chamber of Commerce figures regarding the butter business in Boston for 1916 and 1917 are as follows:—

	1917. Pounds.	1916. Pounds.
Carried over in storage,	8,447,036	9,119,100
Receipts for January,	2,834,914	2,848,659
February,	3,808,405	3,769,297
March,	3,543,043	2,911,830
April,	4,515,853	4,052,249
May,	5,512,020	8,863,803
June,	11,753,491	16,361,341
July,	12,041,303	13,375,446
August,	7,891,006	9,680,632
September,	5,559,546	6,629,484
October,	5,530,601	5,188,022
November,	3,263,422	3,148,953
December,	2,913,964	2,475,818
Total supply,	77,614,604	88,424,634
Exports for year, deduct,	5,555	698,142
Net supply,	77,609,049	87,726,492
Storage stock ¹ December 31, deduct,	7,943,968	8,447,036
Consumption for year,	69,665,081	79,279,456

¹ Stock of Terminal Refrigerating Company not included.

RECEIPTS OF CONDENSED MILK.

The Chamber of Commerce figures regarding the receipts of condensed milk at Boston for 1916 and 1917 are as follows:—

	1917.		1916.	
	Barrels.	Cases.	Barrels.	Cases.
January,	201	45,262	102	28,588
February,	280	51,867	71	36,339
March,	586	78,249	130	52,484
April,	617	99,175	233	46,987
May,	1,030	39,733	342	124,630
June,	5,630	53,913	998	113,489
July,	6,179	81,312	304	70,044
August,	4,180	84,261	53	70,780
September,	19,868	151,393	125	79,595
October,	4,136	84,522	49	68,745
November,	7,316	58,592	465	44,145
December,	314	51,793	73	26,620
Totals,	50,337	880,072	2,945	762,446

MILK.

Milk brought into Boston by Different Railroads, December 1, 1916, to November 30, 1917, as reported by the Public Service Commissioners (Quarts).

DATE.	Boston & Albany.	Boston & Maine.	New York, New Haven & Hartford.	Totals.
1916.				
December,	612,666	9,530,328	2,006,657	12,149,651
1917.				
January,	262,634	8,663,360	2,141,993	11,067,987
February,	359,918 $\frac{1}{4}$	7,871,878	1,938,823	10,170,619 $\frac{1}{4}$
March,	504,508	9,756,528	2,100,416	12,361,452
April,	591,100	9,034,744	2,209,846	11,835,690
May,	574,316	9,789,987	1,991,152	12,355,455
June,	671,883	10,688,754	2,115,703	13,476,340
July,	698,088 $\frac{1}{2}$	11,086,532	1,910,079	13,694,699 $\frac{1}{2}$
August,	479,442 $\frac{1}{4}$	10,803,754	1,680,669	12,963,865 $\frac{1}{4}$
September,	680,751	8,804,196	1,426,987	10,911,934
October,	830,722	8,720,943	1,573,222	11,124,887
November,	843,000	7,999,098	1,519,686	10,361,784
Totals,	7,109,029	112,750,102	22,615,233	142,474,364

Milk brought into Boston annually by Railroads for the Years ending November 30, 1906, to November 30, 1917, inclusive (Quarts).

1906,	114,233,967
1907,	109,882,190 $\frac{1}{2}$
1908,	103,831,278 $\frac{1}{2}$
1909,	108,082,936
1910,	100,606,362 $\frac{1}{2}$
1911,	90,092,772
1912,	104,019,234
1913,	107,306,849
1914,	103,638,225
1915,	109,507,950 $\frac{3}{4}$
1916,	118,516,214 $\frac{3}{4}$
1917,	142,474,364

Comparative List of Number of Cows assessed in Massachusetts May 1, 1906, April 1, 1915, April 1, 1916, and April 1, 1917.

COUNTIES.	1906.	1915.	1916.	1917.	DECREASE.		INCREASE.	
					1906-17.	1916-17.	1906-17.	1916-17.
Barnstable, . .	2,448	2,249	2,200	2,288	160	-	-	88
Berkshire, . .	17,404	14,113	14,509	15,126	2,278	-	-	617
Bristol, . . .	13,702	12,447	13,477	13,743	-	-	41	266
Dukes,	656	637	681	717	-	-	61	36
Essex,	17,131	12,776	12,573	12,751	4,380	-	-	178
Franklin, . . .	12,715	10,382	10,757	10,772	1,943	-	-	15
Hampden, . . .	12,096	9,302	9,118	9,289	2,807	-	-	171
Hampshire, . .	14,383	11,433	11,585	11,645	2,738	-	-	60
Middlesex, . .	29,508	22,892	23,800	23,484	6,024	316	-	-
Nantucket, . .	378	420	359	386	-	-	8	27
Norfolk, . . .	11,200	9,235	9,246	8,960	2,240	286	-	-
Plymouth, . . .	8,465	7,477	7,663	7,765	700	-	-	102
Suffolk,	1,186	837	812	631	555	181	-	-
Worcester, . . .	40,544	30,816	30,854	31,520	9,024	-	-	666
Massachusetts,	181,816	145,016	147,634	149,077	32,849	783	108	2,289

Net increase for State, 1916-17, 1,443.

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price.

LOCATION, NAME.	Owner and Manager.	Approximate Number of Cows.	Where marketed.
Acushnet, White's farm, . . .	Walter A. White, owner and manager.	20	New Bedford.
Agawam, Elm Shade Dairy, . .	S. S. and E. F. Bodurtha, owners and managers.	25	Springfield.
Andover, Arden Farm,	Wm. M. Wood, owner; J. M. Putnam, superintendent; Austin C. Huggins, manager of creamery.	55	Andover, Lawrence, Woburn and Boston.
Arlington, L. M. Dolloff's Farm, .	L. M. Dolloff, owner and manager.	8	Arlington.
Ashland, H. W. Chadbourne's farm,	H. W. Chadbourne, owner and manager.	50	Brookline, Newton and Boston.
Barnstable, Bay Farm,	H. C. Everett, owner and manager.	-	Barnstable.
Barre, Highland View Farm, . .	D. A. Howe, owner; W. E. Howe, manager.	25	Worcester.
Beverly, Bull Rush Farm, . . .	George R. Wales, owner and manager.	26	Beverly.
Beverly, Cherry Hill Farm, . .	H. P. Hood & Sons, . .	156	Brookline and Boston.

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price — Continued.

LOCATION, NAME.	Owner and Manager.	Approximate Number of Cows.	Where marketed.
Bolton, Wataquodock Farm, . . .	Paul Cunningham, owner and manager.	35	Boston and vicinity, by Alden Brothers Company.
Braintree, F. H. Sanford's farm, . .	F. H. Sanford, owner and manager.	20	Braintree.
Charles River, Needham, Walker-Gordon Farm.	Walker-Gordon Laboratory Company, owner; John Nichols, manager.	150	Boston and vicinity.
Chilmark (West Tisbury P. O.), Oakview Farm.	J. F. Adams, owner and manager.	17	Vineyard Haven and Edgartown.
Dorchester, Codman Farm, . . .	Watson B. Fearing, owner and manager.	158	Boston.
East Longmeadow, Peter Kronvall Farm.	Mrs. Peter Kronvall, manager.	8	Springfield.
East Walpole,	Geo. A. Plympton, owner; Eben Voorhees, manager.	100	Boston and vicinity, by Elm Farm Milk Company.
Egypt,	P. J. Robinson, owner and manager.	8	Scituate.
Fairhaven, Dana Farm,	Eliza N. and Edith Dana, owners and managers.	52	Fairhaven, Marion and Mattapoisett (in summer).
Fairhaven, Lewis F. Blossom's farm,	Lewis F. Blossom, owner and manager.	12	Fairhaven.
Framingham, Millwood Farm, . .	Mrs. E. F. Bowditch, owner; J. P. Bowditch, manager; F. E. Barrett, superintendent.	300	Boston and Wellesley.
Framingham, Waveney Farm, . .	Reginald W. Bird, owner; A. E. White, manager.	50	Boston, by Alden Brothers Company.
Framingham, Cherry Meadow Farm.	D. M. and E. F. Belches, owners; E. F. Belches, manager.	20	Framingham.
Franklin, Ray Farm,	E. K. Ray estate, owner; Joseph G. Ray, trustee and manager.	100	Boston, by Elm Farm Milk Company.
Gardner, Heywood Farm, . . .	Miss Helen Heywood, owner; Joseph G. Ray, trustee and manager.	40	Gardner.
Gloucester,	E. W. Babson, owner and manager.	25	Gloucester.
Gloucester,	L. Friend, Jr., owner and manager.	20	Gloucester.
Gloucester, Peter Hagstrom's farm,	Peter Hagstrom, owner and manager.	18	Gloucester.
Gloucester,	T. F. Kerr, owner and manager.	30	Gloucester.
Gloucester, H. Wallace Lane's farm,	H. Wallace Lane, owner and manager.	65	Gloucester.
Great Barrington, Lone Pine Farm,	W. B. Nisbet, owner; Michael Conden, manager.	15	Great Barrington.
Greenfield, Wayside Farm, . . .	Frank H. Reed, owner; Mr. Purrington, manager.	25	Greenfield.
Hardwick, Mixter Farm, . . .	Mary A. Mixter, owner; Dr. Samuel J. Mixter, manager; J. S. Clark, superintendent.	200	Boston.
Haverhill (Bradford District), J. B. Sawyer's farm.	J. B. Sawyer, owner and manager.	-	Haverhill.
Haverhill (P. O. East Haverhill), Fred Kimball's farm.	Fred Kimball, owner; Leonard Kimball, manager.	50	Haverhill.
Haverhill, North Broadway Milk Farm.	E. A. Emerson, owner and manager.	40	Haverhill.

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price — Continued.

LOCATION, NAME.	Owner and Manager.	Approximate Number of Cows.	Where marketed.
Holliston,	S. H. Fessenden, owner, .	40	Boston and Brookline.
Ipswich, Upland Farm,	F. P. Frazier & Son, owner; Benj. F. Barnes, manager.	100	Boston, Manchester, Magnolia and Beverly Farms.
Kingston, Miss Helen Holmes' farm,	Miss Helen Holmes, owner and manager.	20	Kingston.
Lee, John Goodrich's farm, . . .	John Goodrich, owner and manager.	40	Lee.
Lexington, Greenfield Farm, . . .	H. Swenson, owner and manager.	106	Arlington, Lexington and Somerville.
Lexington, Hatch Farm,	George C. Hatch, owner and manager.	26	Lexington and Arlington.
Lexington, Kelsey Ranch,	Harry S. Kelsey, owner; S. H. Parks, superintendent.	65	Boston.
Lexington, Reed Farm,	Frank H. Reed, owner and manager.	30	Lexington and Arlington.
Lincoln,	William J. DeNormandie, owner and manager.	12	Boston.
Lowell, Hood Farm,	C. I. Hood, owner; J. E. Dodge, manager.	135	Lowell.
Lunenburg, Clover Hill Farm, . . .	W. J. Fish, owner and manager.	60	Fitchburg.
Lunenburg, Sunnyside Farm, . . .	George M. Proctor, owner; Fred A. Miller, manager.	48	Fitchburg.
Lynnfield, N. F. McCarthy's farm,	N. F. McCarthy, owner; Eben Holmes, manager.	30	Wakefield.
Marlborough, Fairview Farm, . . .	Elmer D. Howe & Son, owners and managers.	10	Marlborough.
Medford, Mystic Valley Farm, . . .	John J. Mulkerin, owner and manager.	18	Medford.
Methuen, Cox Farms,	Louis Cox, owner; L. Curn, manager.	31	Lawrence.
Millis, Lowland Farm,	E. F. Richardson, owner and manager.	25	Boston.
Milton, Highland Farm,	Patriquin & Newton, lessees; George Patriquin, manager.	65	Milton.
Milton, Home Farm,	Helen Hall, owner and manager.	40	Milton.
Milton, Parker Farm,	S. D. Sanson, owner and manager.	30	Milton.
Needham, K. E. Webb's farm, . . .	Kenneth E. Webb, owner and manager.	31	Needham.
Newton (P. O. Waban), W. B. McMullin's farm.	William B. McMullin, owner and manager.	17	Needham and Newton.
Newtonville, Willow Farm,	D. F. Smith, owner and manager.	60	Newton, Brookline and Boston.
Norfolk, Meadowside Farm,	T. D. Cook & Co., owners and managers.	35	Boston.
Northampton (Florence) Strawberry Hill Farm.	Mrs. E. K. Learned, owner; Wilfred H. Learned, manager.	12	Northampton.
North Falmouth, Manuel G. White's farm.	Manuel G. White, owner manager.	6	North Falmouth.
North Grafton, Bonnybrook Farm,	Everett N. Kearney, owner and manager.	60	Worcester.
North Tewksbury, Mountjoy, . . .	Miss Florence Nesmith, owner; C. E. Lougee, manager.	50	North Tewksbury.
Oak Bluffs, Woodsedge Farm, . . .	F. W. Chase, owner and manager.	20	Oak Bluffs.
Paxton, Echo Farm,	W. J. Woods, owner; Joseph Graham, manager.	40	Worcester, by C. Brigham Company.
Peabody, Brooksby Farm,	Mrs. Wm. A. Smith, owner and manager.	30	Salem.

List of Massachusetts Farms making Milk of Superior Quality and Cleanliness and selling their Product higher than the Regular Market Price — Concluded.

LOCATION, NAME.	Owner and Manager.	Approximate Number of Cows.	Where marketed.
Peabody, J. C. Rogers' farm, .	George H. Simpkins, owner and manager.	30	Salem and Peabody.
Pepperell, George Shattuck's farm, .	George Shattuck, owner and manager.	75	Boston and vicinity, by D. Whiting & Sons.
Saugus, Oaklandvale Farm, . .	Frank P. Bennett, owner and manager.	112	Lynn.
Sherborn, H. N. Brown's farm, .	H. N. Brown, owner and manager.	40	Boston.
Sherborn, Dexter Farm, . . .	George T. Dexter, owner and manager.	23	Boston and vicinity, by Alden Brothers Company.
Sherborn, J. M. Merriam's farm, .	J. M. Merriam, owner and manager.	40	Boston.
Southborough, Deerfoot Farm, .	Robt. M. Burnett, owner and manager.	150	Boston, Cambridge and Brookline.
Southborough,	Thomas P. Lindsey, owner and manager.	6	Southborough.
South Lincoln,	A. H. Higginson, owner; Wm. R. Coutts, manager.	20	Boston and vicinity.
South Lincoln, South Lincoln Dairy Company.	South Lincoln Dairy Company, owner; W. A. Bloodgett, manager.	100	Boston, Cambridge and Brookline.
South Natick, Carver Hill Farm, .	Carver Hill Farms, Inc., owners; Austin Potter, manager.	100	Wellesley, Boston, Natick, Needham, Brookline and Dover.
South Sudbury, Bonnie Brook Farms.	Norman E. Borden, owner; E. T. Clark, manager.	100	Boston and vicinity.
Southville, Waumesit Farm, . .	R. F. Parker, owner and manager.	20	Boston and vicinity, by C. Brigham Company.
Stoneham, Valley Farm, . . .	John P. Hylan, owner and manager.	12	Stoneham.
Templeton, Dolbear Hill Farm, .	Harvey O. Winch, owner and manager.	25	Gardner.
Waltham, Pleasantdale Farm, .	C. V. Hubbard, owner and manager.	35	Weston.
Warren, Maple Farm,	J. R. Blair, owner and manager.	48	Boston and Brookline.
Wayland, Loring Estate, . . .	- - -	40	Brookline and Boston.
Wayland, Perkins' Estate, . . .	S. N. Sanders, manager, .	12	Waltham.
Wayland, Isaac Sears farm, . .	Isaac Sears, owner and manager.	110	Boston and Brookline.
Westfield, Woronoak Farm, . .	Edgar L. Gillett, owner; N. J. Weidhass, manager.	51	Westfield.
West Newbury,	Albert Elwell, owner and manager.	18	Beverly.
West Newton and Barre, Wauwinet Farm.	George H. Ellis, owner; P. F. Staples and R. F. Handy, managers.	350	Boston, Brookline and Newton.
Weston, Ferndale,	Frank H. Pope, owner and manager.	70	Weston and Newton.
West Peabody, Crystal Lake Farm,	John L. Carten, owner and manager.	40	Salem and Peabody.
Westwood, Fox Hill Farm, . . .	Joshua Crane, owner; Dr. A. W. Gorham, manager.	132	Boston.
Winchendon,	C. Bertram Epps, owner and manager.	10	Winchendon.
Worcester, Intervale Farm, . . .	J. Lewis Ellsworth, owner and manager.	14	Worcester.
Worcester, Lewis J. Kendall's farm,	Lewis J. Kendall, owner and manager.	40	Worcester.

List of Massachusetts Dairy Farms making Certified Milk.

LOCATION, NAME.	Owner and Manager.	Certified by —	Approximate Number of Cows.	Where marketed.
Amherst, Massachusetts Agricultural College Farm.	Massachusetts Agricultural College; J. A. Foord, manager.	Medical Milk Commission of Boston.	65	Boston.
Beverly, Cherry Hill Farm,	H. P. Hood & Sons, owners; O. H. Perrin, manager.	Medical Milk Commission of Boston.	300	Boston, North Shore and Lawrence.
Brookfield, Gilbert Farms,	A. W. Gilbert, owner and manager, .	Medical Milk Commission of Springfield.	25	Springfield.
Cohasset, the Oaks Farm,	C. W. Barron, owner; W. S. Kerr, manager.	Medical Milk Commission of Cohasset.	100	Cohasset, Brookline and Boston.
Dartmouth (P. O. North Dartmouth), Marianno Farm.	Oliver Prescott, owner; H. W. Martin, manager.	Medical Milk Commission of New Bedford.	26	New Bedford.
North Reading, Ledyard Farm, . . .	J. A. and W. H. Gould, owners; Wm. Berry, manager.	Medical Milk Commission of Malden.	50	Malden, Melrose, Wakefield and Everett.
North Tisbury, Seven Gates Farm, . .	W. F. Webb, owner; O. L. Curtis, manager.	Medical Milk Commission of West Tisbury, Inc.	25	Marthas Vineyard.
South Dartmouth, Birchfield Farm, .	Lawrence Grinnell, owner and manager,	Medical Milk Commission of New Bedford.	38	New Bedford.
Waltham, Cedar Crest Farm,	John C. Runkle, owner; Louis W. Dean, manager.	Medical Milk Commission of Cambridge.	90	North Shore, Cambridge and Boston.
Waltham, Cedar Hill Farm,	Miss Cornelia Warren, owner; Chas. Cahill, manager.	Medical Milk Commission of Cambridge.	130	Waltham, Cambridge and Boston.
Wayland, Indian,	Edmund H. Sears, owner; W. J. Jauncey, Jr., manager.	Medical Milk Commission of Cambridge.	16	Waltham.

LIST OF LOCAL MILK INSPECTORS.

Milk Inspectors for Cities and Towns.

Adams,	Dr. A. G. Potter.
Amesbury,	James L. Stewart.
Amherst,	P. H. Smith.
Andover,	Franklin H. Stacey.
Arlington,	A. W. Lombard.
Ashburnham,	James F. Hare.
Ashland,	Ralph W. Bell.
Athol,	John H. Meany, V.S.
Attleboro,	Solomon Fine.
Avon,	R. A. Elliott, M.D.
Barnstable,	George T. Mecarta.
Bedford,	Dr. Immanuel Pfeiffer.
Bellingham,	Dr. Norman P. Quint, West Medway.
Belmont,	Thomas F. Harris and H. E. Berger, Wellesley.
Berkley,	Alton A. Haskell.
Bernardston,	G. P. Morton.
Beverly,	Henry E. Dodge, 2d.
Billerica,	Albert H. Jones.
Boston,	Professor James O. Jordan.
Braintree,	F. Herbert Gile, M.D.
Bridgewater,	C. F. Jordan.
Brimfield,	J. Walter Brown.
Brockton,	George E. Bolling.
Brookline,	W. E. Ward.
Cambridge,	Jeremiah S. Sullivan.
Canton,	H. E. Berger, Jr., Wellesley Hills.
Carlisle,	Benjamin F. Blaisdell.
Charlemont,	Charles E. Graves.
Charlton,	Frank Olney.
Chelsea,	Dr. W. S. Walkley.
Chicopee,	C. J. O'Brien.
Clarksburg,	Cassius Quackenbush, North Adams.
Clinton,	Gilman L. Chase, M.D.
Cohasset,	Darius W. Gilbert, V.S.
Colrain,	Earl W. Goodell, P. O. Bardwells' Ferry.
Concord,	Harry E. Tuttle.
Conway,	A. J. Patterson.
Dalton,	H. Ward Ford.
Dana,	Chas. W. Robertson, M.D., North Dana.
Danvers,	Wm. Hugo Nappe.
Dedham,	Edmand Knobel.
East Douglas,	Frank E. Correll.
Easthampton,	Julius J. Mutter.

East Longmeadow,	Henry S. Ashley.
Edgartown,	George N. Cleveland.
Everett,	E. Clarence Colby.
Fairhaven,	Andrew N. Bruckshaw, M.D.
Fall River,	Henry Boisseau.
Fitchburg,	John F. Bresnahan.
Framingham,	Fred S. Dodson.
Franklin,	Russ W. Harding.
Gardner,	Harry O. Knight.
Gill,	George L. Marshall.
Gloucester,	Dr. G. E. Watson.
Gosnold,	John T. Cornell, Cuttyhunk.
Granville,	Laurence F. Henry.
Great Barrington,	Dewitt Smith.
Greenfield,	George P. Moore.
Groton,	Herbert Rockwood.
Hadley,	Henry S. Shipman.
Hamilton,	Dr. C. S. Moore.
Harwich,	Charles H. Taylor.
Haverhill,	Dr. Charlemagne Briault, Acting Inspector.
Hingham,	Charles H. Marble.
Hinsdale,	Alfred N. Warren.
Holyoke,	Daniel P. Hartnett.
Housatonic,	J. J. Barr.
Hudson,	Raymond Coolidge.
Hull,	Carroll A. Cleverly.
Ipswich,	George W. Smith.
Lancaster,	George E. Howe.
Lawrence,	Dr. J. H. Tobin.
Lenox,	James A. Farrington.
Leominster,	William H. Dodge.
Lexington,	Andrew Bain, Arlington.
Littleton,	N. B. Conant.
Lowell,	Melvin F. Master.
Ludlow,	A. L. Bennett, D.V.S.
Lunenburg,	Dr. Charles E. Woods.
Lynn,	George A. Flanagan.
Lynnfield,	Franklin W. Freeman.
Malden,	J. A. Sanford.
Mansfield, ¹	-
Marblehead,	Andrew M. Stone.
Marlborough,	John J. Cassidy.
Marion,	Chester A. Vose.
Medford,	Winslow Joyce.
Medway,	Norman P. Quint, West Medway.
Melrose,	H. E. Berger, Jr., Wellesley Hills.

¹ Milk samples taken to Attleboro for inspection.

Middleborough,	J. H. Wheeler.
Milton,	Wallace C. Tucker.
Millbury,	Fred A. Watkins.
Monson,	Dr. E. W. Capen.
Montague,	Henry E. Tucker, Turners Falls.
Monterey,	F. A. Campbell.
Nahant,	Robert L. Cochrane.
Natick,	Thomas A. Doyle, D.V.M.
Needham,	H. E. Berger, Jr., Wellesley Hills.
New Bedford,	Herbert Hamilton, D.V.S.
Newburyport,	Dr. R. D. Hamilton.
Newton,	Arthur Hudson.
North Adams,	C. T. Quackenbush.
Northampton,	George R. Turner.
North Attleborough,	Hugh Gaw, D.V.S.
Northborough,	Everett C. Valentine.
North Brookfield,	Dr. Windsor R. Smith.
North Dana,	Chas. W. Robertson, M.D.
Northfield,	E. C. Field, Northfield Farms.
North Reading,	J. H. Spear.
Norton,	Edmund H. Elliott, Chertley.
Oxford,	Richard C. Taft.
Palmer,	Charles H. Keith.
Paxton,	Henry H. Pike.
Peabody,	Edward F. McHugh.
Pelham,	Charles H. Jones.
Pepperell,	Dr. Fred A. Davis, East Pepperell.
Pittsfield,	Dr. Bernard M. Collins.
Plainville,	John C. Eiden.
Plymouth,	Walton E. Briggs.
Provincetown,	John Dennis.
Quincy,	James McConnell.
Reading,	Carl M. Smith.
Revere,	Joseph E. Lamb, M.D.
Russell,	G. Henry Mortimore.
Rutland,	Lewis Drury.
Salem,	John J. McGrath.
Salisbury,	John F. Pike.
Sandwich,	J. E. Holway.
Saugus,	A. W. Sawyer.
Scituate,	George T. Otis.
Shelburne,	G. J. Tower, Shelburne Falls.
Shirley,	John H. Riley.
Shrewsbury,	C. I. Rich.
Somerville,	Herbert E. Bowman.
South Hadley,	George F. Boudreau.
Southborough,	Dr. John W. Robinson.

Southbridge,	Albert R. Brown.
Spencer,	W. J. Meloche, D.V.S.
Springfield,	Stephen C. Downs, Fred L. Robertson.
Sterling,	Arthur S. Wilder, Sterling Junction.
Stoneham,	Lawrence E. Doucett.
Stoughton,	William E. Ferrin.
Stow,	Fred E. Whitcomb.
Sutton,	Charles A. Hough.
Swampscott,	Clarence W. Horton.
Taunton,	Lewis I. Tucker.
Tisbury,	Charles S. Norton, Vineyard Haven.
Topsfield,	Charles S. Moore, Danvers.
Truro,	Edward L. Small. ¹
Wakefield,	Carl M. Smith, Reading.
Waltham,	Charles M. Hennelly.
Ware,	Fred E. Marsh.
Wareham,	John J. Beaton.
Warren,	Joseph St. George.
Warwick,	Charles E. Stone.
Watertown,	A. D. Hiller.
Webster,	Leon A. Paquin.
Wellesley,	H. E. Berger, Jr., Wellesley Hills.
Wendell,	Charles A. Fiske.
Wenham,	C. W. Patch.
Westborough,	Charles H. Reed.
West Boylston,	Dr. A. M. Tyler.
West Brookfield,	John W. Houghton.
Westfield,	Walter H. Jenkins.
Westford,	Charles A. Wells.
Westport,	George A. Tripp.
Weston,	H. E. Berger, Jr., Wellesley Hills.
West Springfield,	J. A. Morrill.
Weymouth,	George B. Bayley, South Weymouth.
Whitman,	E. A. Dyer.
Williamsburg,	A. G. Cone.
Williamstown,	G. S. Jordan, V.S.
Winchendon,	Dr. G. W. Stanbridge.
Winchester,	Maurice Dineen.
Winthrop,	S. A. Mowry.
Woburn,	D. F. Callahan.
Worcester,	Gustaf L. Berg.

¹ Inspector of dairies.

CREAMERIES, MILK DEPOTS, ETC.

Co-operative Creameries.

NUMBER AND LOCATION.	Name.	Superintendent or Manager.
1. Ashfield,	Ashfield Creamery,	William Hunter, manager.
2. Cummington,	Cummington Creamery,	D. C. Morey, superintendent.
3. Easthampton,	Hampton Creamery,	E. B. Clapp, treasurer.
4. Monterey,	Berkshire Hills Creamery,	F. A. Campbell, treasurer.
5. Northfield,	Northfield Creamery,	C. C. Stearns, treasurer.
6. Shelburne,	Shelburne Creamery,	E. P. Andrews, treasurer.

Proprietary Creameries.

NUMBER AND LOCATION.	Name.	Owner or Manager.
1. Amherst,	Amherst Creamery Company,	R. W. Pease, manager.
2. Hinsdale,	Hinsdale Creamery,	Walter C. Solomon, proprietor.

Educational.

LOCATION.	Name.	Manager.
Amherst,	Dairy Industry Course, Massachusetts Agricultural College.	W. P. B. Lockwood, professor in charge.

Principal Milk-distributing Depots.

NAME.	Location.	Manager.
Acton Farms Milk Company, . .	Somerville, Windsor Street,	John Colgan, treasurer.
Alden Brothers Company, . .	Boston office, 1171 Tremont Street; depot, 24-28 Duncan Street.	Charles L. Alden, President; John Alden, treasurer.
Anderson Brothers,	Worcester, Eckman Street,	Anderson Brothers.
Bonnie Brook Farms,	South Sudbury,	E. T. Clark.
Mohawk Dairy Company, . .	Boston office, 1047 Kimball Building.	Claude E. Davis, treasurer.
Boston Jersey Creamery, . .	Boston, 9 Fulton Street,	Theo. P. Grant, president and manager.
Brigham, C., Company,	Cambridge, 158 Massachusetts Avenue.	John K. Whiting.
Brigham, C., Company,	Worcester, 9 Howard Street,	C. Brigham Company.
Bristol Creamery Company, . .	Boston, 132 Central Street,	William L. Johnson.
Columbia Creamery,	Springfield, 117 Lyman Street,	H. A. Mosely.

Principal Milk-distributing Depots — Concluded.

NAME.	Location.	Manager.
Deerfoot Farms Dairy, . . .	Boston, 132 Central Street; depots at Northborough and Southborough.	S. H. Howes.
Dufresne Brothers, . . .	Shrewsbury Street, Shrewsbury, .	Dufresne Brothers.
Elm Farm Milk Company, . .	Boston, Wales Place, . . .	James H. Knapp, treasurer.
Elm Spring Farm, . . .	Waltham, Ellison Road, . . .	G. W. Barrow.
Franklin Creamery Company,	Boston, 147 Harrison Avenue, .	Tait Brothers.
Hampden Creamery Company,	Everett, Orient Avenue, . . .	Frank H. Adams, treasurer.
Hood, H. P., & Sons, . . .	Boston, 494 Rutherford Avenue; branches, 24 Anson Street, Forest Hills; 886 Broadway, Chelsea; 298 Dorchester Avenue, South Boston. Brookline, 136 Westbourne Terrace. Lawrence, 629 Common Street. Lynn, 193 Alley Street. Malden, 425 Main Street. Medford, 452 High Street. Watertown, 479 Pleasant Street.	Charles H. Hood.
Kingdon, Fred, . . .	Auburn,	Fred Kingdon.
Laipson Brothers, . . .	Shrewsbury Street, Worcester, .	Laipson Brothers.
Learned, G. S. (Fitchburg Creamery).	Fitchburg, 26 Cushing Street, .	G. S. Learned.
Lyndonville Creamery Association.	Watertown, 86 Elm Street, . .	Willis C. Conner, manager.
Murphy, W. D., . . .	Auburn,	W. D. Murphy.
Nash, Charles A., . . .	Springfield, 120 Oakland Street, .	Charles A. Nash, manager.
Newhall, J. A., . . .	Newburyport, 32 Monroe Street, .	J. A. Newhall.
Perry, A. D., . . .	Worcester, Kansas Street, . .	A. D. Perry.
Plymouth Creamery Company,	Boston, 268-270 State Street, .	John W. Davies.
Prentice, H. H., & Co. (Berkshire Creamery).	Pittsfield, Crane Avenue, . . .	H. H. Prentice.
Rockingham Milk Company, .	Charlestown, Boston office, Hancock Square; depot 330 Rutherford Avenue. Union Street, Worcester, . . .	Herman A. Toothaker, president.
Smith, George F., . . .	Union Street, Worcester, . . .	George F. Smith.
Somers Creamery Company, .	Springfield, 178 Dwight Street, .	W. M. Cushman.
Springfield Creamery, . . .	Springfield, Main Street, . . .	F. B. Allen, proprietor.
Tait Brothers, . . .	Springfield, 37 Vinton Street, .	Tait Brothers, proprietors.
Turgeon, Frank H., . . .	Boston, 213 Camden Street, . .	Frank H. Turgeon.
Turner Center Dairying Association.	Boston office, 63, 67 and 69 Endicott Street.	Irven L. Smith, manager.
Wachusett Creamery, . . .	Worcester, 6 Lincoln Street, . .	E. H. Thayer & Co., proprietors.
Whiting, D., & Sons, . . .	Boston, 570 Rutherford Avenue, .	Charles F. Whiting.

Modified Milk Laboratories.

H. P. Hood & Sons, . . .	Boston, 494 Rutherford Avenue, .	C. H. Hood.
Walker-Gordon Laboratory, .	Boston, 1106 Boylston Street, .	George W. Franklin.
D. Whiting & Sons, . . .	Boston, 570 Rutherford Avenue, .	Charles F. Whiting.

Receiving Depot for Milk, for Shipments to New Rochelle, New York.

NAME.	Location.	Manager.
Borden Condensed Milk Com- pany.	West Stockbridge.	—
Willow Brook Dairy Company,	Sheffield,	Frank Percy.
Willow Brook Dairy Company,	North Egremont,	George Wyble.

ENCOURAGEMENT OF PRACTICAL DAIRYING EXPENSES.

Agents and assistants, compensation,	\$754 24
Agents and assistants, expenses,	1,464 22
Printing,	541 94
Supplies,	55 18
Express,	39 65
Postage,	12 92
Judges, expenses,	21 56
Certificates,	293 50
Cash prizes,	1,134 00
	<hr/>
	\$4,317 21

REGULAR BUREAU EXPENSES.

Agents, compensation,	\$2,058 89
Agents, expenses,	3,022 50
Bureau, compensation,	250 00
Bureau, expenses,	385 43
Samples purchased,	337 02
Analysts, analyses,	768 00
Analysts, court attendance,	75 00
Clerks, temporary,	147 25
Photography and lantern slides,	210 99
Postage,	83 00
Telephone,	41 90
Express,	6 43
Printing,	495 52
Supplies,	117 00
	<hr/>
	\$7,998 93

P. M. HARWOOD,

General Agent.

Accepted and adopted as the report of the Dairy Bureau.

OMER E. BRADWAY.

GEORGE W. TRULL.

GEORGE E. TAYLOR, JR.

JUL 3 1 40 WPA



